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Therapeutic Merits of Social Media: Blogging to Reduce Depressive Symptoms and Increase Psychological Well-Being

Thesis directed by Associate Professor Leilani Feliciano

ABSTRACT

The literature is replete with studies that suggest the psychological benefits of writing. Benefits have ranged from increased general well-being and more positive affect to fewer visits to the physician’s office. Writing appears to be helpful through such mechanisms as emotional expression, exploration of the self, and catharsis. Literature on writing processes has shown writing to be more beneficial when participants write about something meaningful and allow themselves to shift to an outside perspective. Writing in a social media context such as a blog may enhance the benefits of writing in general due to the added effects of social support. People feel less alienated and more supported when they are part of social internet groups. Blogs also allow for the exchange of information such as coping mechanisms, therapy preferences, and anecdotal experiences with depression or anxiety medication. The present study sought to examine the therapeutic effects of blogging as they pertain to adults with depressive symptoms when compared to the therapeutic effects of writing alone. Participants who blog as well as participants who use a journal were hypothesized to see a decrease in depressive symptoms, but the blogging group would see more positive effects through the power of social support. Results indicated that both filter writing and expressive writing saw decreases in depressive symptoms and autonomy. Results also indicated that participants in the filter group saw more positive psychological outcomes than participants in the
expressive writing group in happiness, depression symptoms, autonomy, environmental mastery, and self-acceptance.

*Key Words: Blogging, Expressive Writing, Depression*
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CHAPTER I
INTRODUCTION

Blogging as a therapeutic technique is an intuitive step in the evolution of psychotherapeutic strategies, whether as a supplement to existing interventions or as a stand-alone self-help strategy. A blog, a type of social media outlet, consists of a personal website where information, opinions, experiences, etc. are recorded and shared. Social media refer to subtypes of media that are public and allow people to post text, pictures, videos, and other types of information in a customized and personal way. A plethora of different social media outlets function in today’s world (e.g., Twitter, Facebook, Tumblr), and some of them have been integrated into mass media in a substantial way. For example, news and current events updates are available from all major news outlets on Twitter, and many major news outlets actually show tweets from the public. Young adults are in a unique position to benefit from social media, having grown up with social media as an influential part of their social lives. As social media become a more integral part of the way people function, it provides a new and progressive avenue for a user-friendly, public, cost effective, and flexible source of therapeutic help.

Depression

Recent research suggests a disturbing increase in mental health problems among our nation’s youth (Hunt & Eisenberg, 2010; Twenge & Foster, 2010); a finding that extends to college-age students as well (lifetime prevalence rates over 50%; Vazquez,
Torres, Otero, & Diaz, 2011). Of these mental health concerns, mood disorders are the most frequently observed, with lifetime prevalence rates as high as 20.8% in community samples (Feliciano, Renn, & Areán, 2012). Of these mood disorders, depression is the most common and well-studied. Depression is often used in everyday language as a descriptor for someone who is suffering from sadness. In the practice of clinical psychology, depression is much more complicated and encompasses several different categories of mood disorders as specified in The Diagnostic and Statistical Manual of Mental Disorders, Fifth ed. (DSM–5; American Psychiatric Association [APA], 2013). A diagnosis of Major Depressive Disorder (MDD), the most severe of the unipolar disorders, is assigned when an individual meets five of nine symptoms in the same two-week period. These symptoms are present for the majority of the day, almost every day during this time period. Symptoms include depressed mood (e.g., sadness, feeling “down”, blue, or negative affect), loss of interest in pleasurable activities, weight loss or gain, sleep disturbances (either insomnia or hypersomnia), psychomotor agitation or retardation, fatigue, feelings of worthlessness, difficulty with concentration, and recurrent thoughts of death (DSM-5).

Clinicians and researchers use multiple techniques for identifying depression. Strategies for assessment and diagnosis include in-person interviews with the client, screening instruments, and structured and semi-structured clinical interviews, although they are often not used independently of one another (Feliciano, Renn, & Areán, 2012). Screening tools are designed to be highly sensitive in order to detect depressive symptoms in anyone who has depression. The most efficient method for diagnosing depression is to first use a screening tool, then if the screen is positive, move to an in-
person interview with a skilled and trained psychologist or mental health clinician to confirm the diagnosis and search for potential causes (Feliciano, et al., 2012).

The prevalence of depressive disorders varies by setting, population, and specific disorder examined. MDD is the most prevalent mental disorder in the general population and prevalence is greater in young adults when compared to older adults (Kessler, et al., 2005). According to the DSM-5 (APA, 2013), 18-29 year olds are three times more likely to suffer from MDD than individuals sixty years of age or older. One reason for the discrepancy in prevalence rates may be because the early adult years are a period of many personal and interpersonal changes. When a student attends college, for example, there are changes in their social support system, financial situation, surroundings, and their overall daily structure of events, all of which can increase stress and, in turn, vulnerability to depression.

While the DSM-5 has definitive criteria for MDD, not all people experiencing distress from depressive symptoms will meet these criteria. Subclinical symptoms of depression, referred to as Unspecified Depressive Disorder (UDD) is classified in the DSM-5 by experiencing depressive symptoms that cause significant stress or have a clear, negative impact in social, occupational, or other important areas of functioning, but fall outside of the criteria for another mental disorder (APA, 2013). In a meta-analysis by Ibrahim, Kell, Adams, and Glazebrook (2012), the prevalence rates of depressive symptoms in university studies ranged from 10% - 85%, with a weighted average of 30.6%. This is much higher than the twelve month MDD prevalence rate of 7% found in community dwelling adults reported in the DSM-5 (APA, 2013), or the lifetime prevalence rate of 16.6% for MDD reported when using DSM-IV (APA, 2000) criteria.
(Kessler et al., 2005). Ibrahim and colleagues (2012) also detected a significant gender difference, where females were more likely to report clinically significant depressive symptoms than males. However, this difference in rates may be an artifact of reporting practices as women are socialized to talk about their feelings more than men. Alternatively, the differential rates observed may be due to help-seeking practices, as men are less likely to seek provider assistance for their symptoms, which may be due to social norms and cultural expectations for males (Fikretoglu, Liu, Pedlar, & Brunet, 2010). Regardless of the specific depressive disorder examined, the university population has been noted to be at an increased risk for mood disorders and, in particular, depression (Kessler et al., 2005).

Social Media

Social media refer to web domains that are based on user generated shared content (Deen, Withers, & Hellerstein, 2013). Not all social media are the same. Social media include a number of different outlets that serve a number of purposes. Facebook may be described as a catch-all for social media use, incorporating pictures, status updates, links, and videos, while other types of social media have more specific uses. Instagram is focused on pictures, while Twitter is considered a microblog because it is focused on text entries no longer than 140 characters in length. WordPress is a blogging environment, utilizing text entries without a character limit and allowing members to comment on each other’s posts. One feature that social media sites have in common is the ability for others to comment on something that has been made public. This feature is what makes social media social in nature. Without the establishment of a communal
source of contribution and dialogue, the writer has no sense of the community of which they are a part (Baker & Moore, 2008).

Social media can be a tool for college students to use to adapt to their new surroundings and change by providing a means for students to stay connected to old friends and family, as well as establish a new support system in their changing environment. As people become more satisfied with the number of face-to-face and online friends, they experience an improved sense of community and feel less isolated and alienated (Baker & Moore, 2008). The versatile nature of the different social media services available serve as a flexible and accessible way to have access to a new community, old friends, and organizations, regardless of the motivation individuals have for accessing social media. The motivation for the use of social media plays an important role in an individual’s satisfaction with it. If an individual is using social media with the intention of strengthening his/her social network and system of support, he/she feels more satisfied with the social media experience when compared to those who are using social media to kill time or alleviate boredom (Wright, Rosenberg, Egbert, Ploeger, Bernard, & King, 2013).

The sense of community provided by social media may prevent experience of isolation for those who may lose contact with or have trouble forming social connections due to circumstance. In a study by Cotton, Ford, Ford, and Hale (2012), internet use was shown to reduce the probability of depression categorization for older adults by about 20-28%. Although this study was conducted with older adults, the findings would likely hold for younger adults, a generation who are more familiar with internet usage and are the largest consumers of social media (Zickuhr, 2010). If college students can access and
appropriately interact within social media, this may serve as a strategy to increase social contact, thereby decreasing isolation and decreasing risk of developing depressive symptoms. When combined, writing and social media may be powerful tools to fend off and fight against isolation and alienation.

**The Benefits of Writing**

The mere act of putting words to an important psychological event is an important process for psychological healing, and therapists have been using journaling as an adjunct to therapy for generations (Pennebaker, 1997). Writing has been shown to be beneficial for physical and psychological health, leading to improvements in general well-being, lowering depressive symptomology, and even reducing visits to physicians (Pennebaker, 1997; Smyth, 1998; Krpan et al., 2013). Journal writing is a technique some therapists employ to supplement and enhance the process of psychotherapy. Participants who engage in writing that utilizes emotional disclosure experience more positive outcomes in therapy, such as greater reports of satisfaction with psychotherapy treatment (Graf, Gaudiano, & Geller, 2008). As an adjunct to therapy, clients may be able to spend more time on their own processing the material covered in their last session, leading to a more personalized and fuller understanding of their situation.

The effectiveness of writing may simply be due to allowing an individual to have a safe outlet to explore his or her sense of identity. For example, in a study of athletes’ impressions of the benefits of writing about their negative sports experiences, Hudson and Day (2012) found that participants who journaled were able to re-evaluate the situation, reframe events, and process events in new ways, providing them with a strategy to find new, productive solutions to problems. Participants also reported that they felt an
element of catharsis from the exercise, allowing them to vent and release some of the tension they had from the experience in a safe environment. This exercise may be especially beneficial for those individuals who are shy, introverted, or do not have many people to disclose personal situations to (Hudson & Day, 2012).

Writing may also allow for a freer, more uninhibited style of exploration as opposed to speaking with someone. People who are at risk for depression may engage in thought suppression in an attempt to control their mood (Rude, Gortner, & Pennebaker, 2004). This sort of inhibition can cause distress. Since writing can provide an uninhibited mode of exploration, it may be a viable avenue for the release of suppressed thoughts and the stress that can accompany them.

**Subject Matter**

**No-specific journal topic.** Baikie, Geerlings, and Wilhelm (2012) found that writing can be equally beneficial for individuals regardless of the emotional valence of the topic utilized (e.g., writing without a specific prompt to discuss positive or negative experiences). One explanation for this finding could be that when one sets a goal for oneself (such as writing every day for a certain amount of time) and achieves that goal, the achievement of the goal can provide positive benefits outside of the writing process. The individual may find meaning and motivation in completion of the goal itself, so the writing may have just been a means for meaningful achievement, and therefore beneficial.

**Meaningful events as journal topic.** Difficult experiences. General writing may prove beneficial for some, but research has shown that writing about important, deeply personal subjects may be more beneficial than writing about superficial topics
One example of structured writing about difficult experiences is the Expressive Writing Paradigm (EWP) created by Pennebaker in 1997. The writing is centered in deep, emotional issues and requires spending sufficient time (about 15-20 minutes per day) writing for three to five consecutive days. Here is an example of a typical expressive writing prompt:

For the next 3 days, I would like for you to write about your very deepest thoughts and feelings about an extremely important emotional issue that has affected you and your life. In your writing, I’d like you to really let go and explore your very deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives, to your past, your present, or your future, or to who you have been, who you would like to be or who you are now. You may write about the same general issues or experiences on all days of writing or on different topics each day. All of your writing will be completely confidential. Don’t worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, continue to do so until your time is up. (Pennebaker, 1997, p. 162)

EWP, when compared to writing about superficial topics, is associated with significant drops in physician visits from before to after writing among healthy samples. According to self-reports, the writing can be painful during the process, but the process leads to long-term improvements in well-being and mood (Pennebaker, 1997). A meta-analysis by Smyth (1998) also showed that EWP produced 1-month positive post-writing outcomes such as reported health, psychological well-being, physiological functioning, and general functioning. Within the studies examined, university students were found to
have significantly higher psychological well-being outcomes than non-students. In a study that used participants with MDD, Krpan and colleagues (2013) found that participation in EWP showed significant decreases in depression scores on assessment measures immediately following treatment and at follow-up four weeks later.

The benefits of EWP are thought to be due largely to the confrontation of deep, personal issues, though its mechanisms remain unknown (Pennebaker, 1997; Krpan et al., 2013). Graf and colleagues (2008) found that clients who were engaged in emotional disclosure writing showed greater reductions in depression, anxiety, and overall distress, as well as greater improvement in their overall psychotherapy progress. Individuals who participated in written emotional disclosure showed significant improvements in implicit self-esteem (O’Conner, et al., 2011).

Expressive writing has also proved to be beneficial in relationships. Couples who use expressive writing are more likely to increase their use of positive emotion words, which can lead to better outcomes for the couple long-term (Slatcher & Pennebaker, 2006). Outcomes for couples may be more positive by allowing the couple to use positive emotion words and explore their relationship in a deeper, more meaningful manner. Although this information is geared toward outcomes in romantic relationships, the same principles may apply to other types of interpersonal relationships that may be causing a stressful environment for the affected individual. If a person is able to explore the deep, difficult, and personal problems within a relationship, they may find better ways to cope with and approach those problems within the relationship.

Another possible mechanism of EWP is that it provides an outlet for emotional processing. Researchers have found that expressive writing can lower depressive
symptoms and have lasting effects for students who are less expressive and have fewer outlets for expression (Gortner, Rude, & Pennebaker, 2006). If less expressive individuals use writing as an outlet due to a lack of resources, then a social media outlet could be a perfect place to take advantage of that principle. A blogging community that is designed for and used by like-minded individuals can provide a safe and understanding environment for disclosure and provide a much needed social contact.

*Positive experiences.* The writing process may also be beneficial when focusing on positive rather than purely negative or adverse experiences. Bhullar, Schutte, and Malouff (2011) found that reflecting on satisfaction can predict higher levels of life satisfaction, positive affect, psychological well-being, and social well-being, as well as lower depression, anxiety, and stress. This type of writing is a different take on the idea of expressive writing, and helps people to change their focus from negative to satisfying life experiences. Such a writing construct may be an alternative to writing about difficult, painful material in order to find therapeutic results, and could be a powerful tool in helping to alter the perspectives of those battling depression.

**Style**

While subject matter may be an important part of the psychological benefits of writing, it is not the only aspect of writing where benefits may be wrought. Individuals with depression often have a tendency to focus inward, which makes seeing different outcomes and perspectives difficult. When analyzing the writing of individuals with depression and individuals in remission, Rude et al. (2004) found that those with current depression and those in remission used the word “I” more often than those individuals
that had never had depression. The incessant use of the word “I” may be an indicator of
the extent to which individuals with depression may be self-involved or self-focused.

Another writing paradigm, which helps combat inward-focus, is the

*Psychological Displacement Paradigm in Diary-Writing (PDPD)* (Chang, Huang, & Lin,
2012). PDPD is different from EWP in that it incorporates an intentional shift in pronoun
perspective and does not simply include difficult, personal subject matter. In PDPD, a
person moves across different views of their negative personal issue. The first
perspective a person writes from is an “I” focused perspective. This perspective uses
language that is concentrated on self-awareness and explores the negative personal issue
from the individual’s own point of view. The paradigm then calls for a shift to the use of
second-person pronouns. By taking a step back from the problem, the individual can
examine the self without being immersed in the situation. The individual is also allowing
for an outside perspective to be taken and, in doing so, allows room for a self-distanced
solution and, ultimately, self-acceptance (Chang et al., 2012).

Although the PDPD explicitly focuses on changing the way an individual uses
their linguistic perspective, this change may happen without overt focus on language. In
a study analyzing the way EWP affects writing perspective, North, Meyerson, Brown and
Holahan (2013) found that all individuals, throughout the course of the trial, ended up
shifting their focus and using fewer singular pronouns. However, this process can be
facilitated by using a particular focus. Individuals who used a strategy of acceptance and
positivity in their expressive writing saw more drastic effects than those individuals who
did not. Also, people who used this integrative strategy started seeing their situation from
a more social point of view, using more first person plural pronouns (North et al., 2013).
The sociality implicated in this style of writing may be able to be tapped even more effectively if these principles were applied in an actual social setting, such as a blogging community of individuals with a similar mental disorder. EWP, when integrated with positivity and acceptance, also tends to help people shift their focus off of the past and look toward the future (North et al., 2013). Individuals with depression also tend to ruminate on the past and present. Seeing the future requires a different perspective and allows for the formulation of goals and room for growth.

The benefits of writing alone seem to come from an ability to explore, express, take a new perspective, and find a new focus. In fact, research has shown that (micro)blogs can lead to benefits such as increases in perceived social support (Baker & Moore, 2008), increased subjective well-being (Ko & Kuo, 2009), positive psychological outcomes (Boniel-Nissim & Barak, 2011), psychological empowerment (Stavrositi & Sundar, 2008; 2012) and coping with chronic disease (Pulman, 2009). Since all of these factors can be experienced through the simple act of writing in a blog, it seems plausible that these principles applied in a blogging community enhance the effects of writing and help individuals in a more concrete way: by providing new perspectives, safety, room to explore, access to empathy, a social network, and a social support system.

**Internet Means of Support and Communication**

Individuals with depression have a tendency to focus inward and this focus is typically negative in nature. According to Aaron Beck (1967), depression stems from a negative view of self, experience, and the future. Individuals with depression have a tendency to see the self as “defective, inadequate, or unworthy” (Rush & Beck, 1978, pp 202). The negative view of experience means that individuals with depression perceive
even neutral or positive experiences as negative, viewing their lot in life as overwhelming or unfair. A negative view of the future for individuals with depression is the perception that their misery and failure as permanent and inevitable (Rush & Beck, 1978). Because seeking help for depression is often stigmatized among adolescents (Pepin, Segal, & Coolidge, 2009), the perceived stigma around mental health added to their negative predictions of inevitable treatment failure may cause individuals suffering from depressive symptoms to avoid seeking mental health services. Without a proper avenue for self-expression and self-exploration, some individuals may never break out of the cycle of isolation and self-focus. Online support communities and blogging platforms could give individuals with depression privacy and anonymity, along with the safety and support for exploration.

Social support has been shown to be a critical factor in the literature in explaining why some people are better at coping with loss and traumatic events than others (Upadhyay & Singh, 2014). When individuals identify with a certain mental health group, they feel a sense of support, have access to coping strategies, and reject the stereotypes and stigma that come along with mental illness. Identification with a mental illness group, however, could potentially lead to lower self-esteem because of the stigma associated with the group. The advantage to identifying with a mental illness group, then, is that perceived support and collective coping strategies combat the presence of lowered self-esteem (Crabtree, Haslam, Postmes & Haslam, 2010). Conversely, having external social support and a reason to reject stigma and stereotypes could lead to increased self-esteem, so the benefits of social support from a particular mental health group may outweigh any potential drawbacks.
Another benefit of an internet means of sociality and support is accessibility. Adults of all ranges, young to old, perceive barriers to mental health. Pepin et al. (2009) created and used the Barriers to Mental Health Services Scale (BMHSS), a self-report questionnaire examining the barriers individuals feel with regard to accessing mental health services. The results of the study showed that younger adults perceived more barriers to treatment than older adults, and both younger and older adults ranked payment and inability to find a psychotherapist as the most potent barriers for finding mental health services. Other barriers include help seeking, belief that symptoms are normal, knowledge and fear of psychotherapy, physician referral, concerns about psychotherapist’s qualifications, stigma, transportation concerns, and ageism. Research in psychological effects of new media has documented the ease with which online users engage in self-disclosure on some highly personal matters, likely due to the relative anonymity. Thus blogging as a medium emerges as a potential solution to many of these perceived barriers; blogging is free if you have access to the internet via computer or smartphone, sites are easily found using online search engines, and they can be accessed confidentially and anonymously if desired. Although online support may not boast the credentials and professional help that a licensed psychotherapist may have, information and support from an online community may be an effective coping tool and a source for significant psychological benefits.

Support

Alienation and isolation often occur with depression. In a study by Baddeley, Pennebaker, and Beevers (2012), individuals with depression differed more in their quality of interaction with others rather than the quantity. Individuals with depression
spent less time in groups and less time with friends, but overall there was no significant
difference in the amount of time spent with people. Individuals with depression did,
however, use more negative words in their interactions, particularly around their romantic
partners, with whom they spent the most time. The pattern of using negative emotion
words with regard to the self may lead to the individual driving others away. Combined
with the lack of meaningful social experiences with groups of people, it is likely that
individuals would avoid others because of the expectation of being alienated and hurt,
further exacerbating their feelings of alienation and isolation (Baddeley et al. 2012).

Individuals who blog in mental health online communities feel a sense of social
integration, a reliable alliance, an improved sense of community and feel less isolated and
alienated (Baker & Moore, 2008). The sense of social integration is important for the
sense of belonging to a community and feeling a sense of being understood and supported
by like-minded people. A reliable alliance may be another important factor in feeling
accepted in a community, since individuals with depression may have never felt as
though they had anyone to count on (Baker & Moore, 2008). Also, writing in an online
setting helps to decrease feelings of emotional loneliness and increase positive mood (van
der Houwen, Schut, van den Bout, Stroebe & Stroebe, 2008). The ability of online
communities to provide support and help an individual feel less isolated is a major asset
for helping people cope better with and manage symptoms of depression.

Safety may play a large factor in the online community’s ability to provide help
for individuals with depression. The experience of disclosure of a stigmatized identity
has implications for how that person expresses that identity in the future (Chaudoir &
Quinn, 2010). Positive and supportive disclosure experiences can have long term
psychological benefits and may help stigmatized individuals trust others more readily. This, in turn, may help individuals with depression feel more comfortable with their stigmatized identity. If individuals perceive an initial disclosure event as ill-received and a negative experience, they may fall further into the idea that their identity is a negative, unacceptable part of them. Finding a community of like-minded strangers may be a safer outlet for identity disclosure and exploration since they have no social obligation or reciprocating responsibility to the group if it is a negative experience (Chaudoir & Quinn, 2010). People with depression are attuned to the way people react to them. If they feel encouraged to share and speak, they will experience reinforcement and will be more likely to share more information in the future (Geerts, Bouhuys, & Bloem, 1997).

Blogs may also provide a space for a productive type of emphasis on the self. A blog provides a forum for a long, personal narrative and can be a place to find empowerment in one’s own story. Blogs also allow for a detailed, explorative, and personal version of the individuals’ disorder. This exploration can happen in a safe environment, free from stigma and expectations from doctors or other patients in a physical group setting. Each and every detail can be expressed and traversed, without fear of judgment, and may give individuals a voice with relation to their experience in a world where they may not feel they have ever had one (Sundar, Edwards, Hu, & Stavrositu, 2007). This sort of active approach to their narrative can help deal with suffering by setting goals and taking the time to see how they tell their story, and perhaps where their experiences will take them.

One shortcoming of online communication may be a lack of nonverbal communication and, therefore, understanding and support. For example, Ledbetter and
Larson (2008) examined the supportiveness of email. They found that nonverbal emotionally expressive cues (such as emoticons and emotive words like “sigh” and “gasp”) did not result in greater support satisfaction of the emails, although the emails were experienced as supportive. One explanation for the perceived supportiveness of emails despite the lack of nonverbal emotional support is that the content or the message of the text is already clearly conveyed as supportive and, therefore, needs no supplemental nonverbal emotional cues. The use of nonverbal emotional cues in text is more likely vestigial than adaptive, partially because physical nonverbal cues are involuntary while text nonverbal cues are intentional and, perhaps, less meaningful (Ledbetter & Larson, 2008). While text may never achieve the nonverbal, automatic support that physical interactions do, support satisfaction is a viable consequence of textual communication.

**Information**

The flexibility of online support provides an avenue for a number of different helping mechanisms. As a source for both support and information in an environment that provides anonymity and ease of access, online support communities are multidimensional. The information they gather may not be quite as academic or licensed as information they get from a mental health professional, but personal coping information may be just as helpful and pragmatic. In blogging communities, information is given to and received from similar perspectives. This allows for the exchanges of different subjects, from coping methods and problems with medications to models of therapy that were most beneficial (Nimrod, 2013).
Information can also be an important part of the coping process for individuals with depression. While women are more likely to cope by talking about living with their disorder, men are more likely to cope by seeking and utilizing information about the disorder (Nimrod, 2013). Access to either type of coping method can give an individual a sense of empowerment, stress relief, and an enhancement of general well-being, even without effects on therapeutic measurements. If an individual experiences any sort of offline improvement, then the experience can still be measured as beneficial (Nimrod, 2013).

Many of the benefits an individual receives from an online community, however, are related to motivation and enthusiasm. People could benefit more from an intervention that is meaningful to them than one they find trivial and unproductive, which speaks to the effectiveness of the deep, emotional writing that takes place in the expressive writing paradigm (Pennebaker, 1997). People may find different subjects and different groups more helpful than others based on their own priorities and needs. Keatling (2013) found that Christian groups are more likely to talk about scripture and give information about coping, and General groups are more likely to use supportive language and speak less about religion or specific information. If an individual would find the experience of a Christian group more meaningful than general social supportive messages, then they may find more merit in participating in a Christian group. One group was not more generally helpful than another, but individuals seem to find more help in a group that better satisfies their motivation for seeking help, whether it is seeking information about the problem in question or seeking social support and encouragement.
Expressive writing has been shown to be beneficial for healthy populations as well as populations that are suffering from clinically significant depressive symptoms. Online social support groups have also been proven to help individuals become less alienated and alleviate depressive symptoms. The current study sought to examine the benefits of expressive writing when combined with the support of internet sociality. The study utilized an online or a digital diary control condition which assessed the psychological benefits of writing on its own, without the added social support of comments or publication. An important aspect of the study was also parsing out the benefits that may be received from internet sociality alone, without the addition of deeply personal writing. The most important question this study sought to answer, however, is about the interaction between deeply personal writing and internet sociality. The first hypothesis of current study is that the expressive writing condition will see more psychological benefits than the filter writing group across all measures. The second hypothesis is that the high comment group will see more positive changes than the low comment group. The third and final hypothesis of the current study is that the high comment, expressive writing group will see the most positive psychological outcomes.
CHAPTER II

METHOD

Participants

Undergraduate students from the University of Colorado Colorado Springs (UCCS) were recruited using the SONA Experiment Management Systems and screened using the Patient Health Questionnaire (PHQ-9). The SONA system is an on-line resource for psychology faculty and students to advertise and sign up for participation in research studies. In addition to SONA, five large, core psychology courses were targeted for an in-person pitch of the project. The in-person pitch included information on where to find part one of the study on SONA, as well as steps to participate in part two after receiving an email invitation. Inclusion criteria for participants included a PHQ-9 score of 10, which represents the cutoff for moderate depressive symptomology. A total of 779 students were screened on SONA and 182 qualified for the part two of the study using the inclusion criteria. Of the qualifiers, only thirty-seven college-aged students with depressive symptoms were enrolled in part two of the study, and three of these students dropped out due to extenuating life circumstances. Thus, thirty-four participants completed part two and are included in the final analysis (See Table 1 for demographic descriptive statistics). The total sample included 20.6% males and 79.4% females. The gender and age breakdown of those who completed the study was representative of those who qualified (22.5% of the students who qualified were males vs. 77.5%; mean age of screened students was 22.19 vs. 24.18 for sample).
Table 1

Means, Standard Deviations, and Percentages for Demographic Variables for Participants who Completed both Parts 1 and 2 of the Study.

<table>
<thead>
<tr>
<th>Demographic factors</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>24.18</td>
<td>8.05</td>
<td>27</td>
<td>79.4</td>
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<tr>
<td>Gender (% female)</td>
<td>15</td>
<td>44.1</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Ethnicity (% Non-Caucasian)</td>
<td>15</td>
<td>44.1</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>White or Caucasian</td>
<td>18</td>
<td>52.95</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Hispanic/Latino/Spanish</td>
<td>9</td>
<td>26.4</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Asian</td>
<td>2</td>
<td>5.9</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Black or African American</td>
<td>2</td>
<td>5.9</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Multiracial</td>
<td>3</td>
<td>8.8</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Relationship Status (%)</td>
<td>30</td>
<td>88.2</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Unmarried</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>24</td>
<td>70.6</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Married</td>
<td>3</td>
<td>8.8</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>5.9</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Divorced</td>
<td>1</td>
<td>2.9</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Domestic partnership</td>
<td>4</td>
<td>11.8</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Education (&gt;13 years)</td>
<td>13.82</td>
<td>1.49</td>
<td>22</td>
<td>64.7</td>
</tr>
<tr>
<td>Annual Income (% &gt; $20,000)</td>
<td>15</td>
<td>44.1</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>&lt; 9,000</td>
<td>8</td>
<td>23.5</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>9,000 – 20,000</td>
<td>11</td>
<td>32.4</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>20,000 - 30,000</td>
<td>6</td>
<td>17.6</td>
<td>27</td>
<td>79.4</td>
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<tr>
<td>40,000 – 74,000</td>
<td>6</td>
<td>17.6</td>
<td>27</td>
<td>79.4</td>
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<tr>
<td>&gt; 75,000</td>
<td>3</td>
<td>8.8</td>
<td>27</td>
<td>79.4</td>
</tr>
</tbody>
</table>

Power Analysis

Krpan and colleagues (2013) have shown that medium effect sizes ($\eta_p^2 = .17$) can be found in group differences between participants with MDD using EWP and control writing. An a priori power analysis using G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007) was thus conducted using a partial eta of .17 ($f = 0.42, 1-\beta = .80, \alpha = .05$). The analysis indicated that a sample size of 14 participants for each group would be necessary to obtain a medium effect with high power, for a total of 84 participants.
Measures

**Hope.** The Adult Hope Scale (AHS; Snyder, 1991) is a 12-item self-report measure that assesses hope through the constructs of agency and pathways. The measure contains four agency items, four pathways items, and four filler items. Agency items assess the individual’s overall sense of determination toward goals, while the pathways items assess the individual’s idea of his or her own ability to overcome obstacles to the achievement of particular goals. The scale is interpreted by calculating the total score of the measure. The total scale shows good internal consistency (Cronbach’s alpha = 0.74 - 0.84) as well as good temporal stability (Snyder, 1991). Cronbach’s alpha in the present sample was low (α = .50), with less than 1% missing data.

**Quality of Life.** The Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999) is a 4-item self-report scale of global subjective happiness that uses a 7-point Likert scale. A composite score is computed by averaging responses to the four items and scores range from 1.0 to 7.0, with higher scores reflecting greater happiness. The SHS was developed and validated using a sample of 2,732 participants compiled from 14 different studies, and has been shown to have good to excellent internal consistency (Cronbach’s alpha = 0.79 - .94). The SHS also has demonstrated stability over time as well as good construct validity (Lyubomirsky & Lepper, 1999). Cronbach’s alpha in present sample was high (α = .81), with less than 1% missing data.

The Psychological Well-Being Scales (PWBS; Ryff & Keyes, 1995) is a 42-item self-report measure that assesses well-being in six dimensions: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Autonomy refers to an individual’s confidence in one’s own opinion,
regardless of the general consensus. Environmental mastery refers to one’s control over the situation in which that individual lives. Personal growth references one’s belief that challenging new experience are important. Positive relations with others refers to the belief that others would describe the individual in a positive way. Purpose in life refers to an individual’s own purpose in life as clear. Self-acceptance refers to the affinity one has for one’s own personality. Individuals respond to the items on a 6-point Likert-type scale (1 = strongly disagree; 6 = strongly agree). The PWBS shows consistency on various aspects of well-being across age and gender, as well as appropriate correlations with related measures (Ryff & Keyes, 1995). Higher scores on each on scale indicate greater well-being on that dimension, and scores on each scale are interpreted using the total from the items from each scale. Cronbach’s alpha in present sample was high (α = .90), with less than 1% missing data.

The Quality of Life Inventory (QOLI; Frisch, 1994) is a 32-item well-being and life satisfaction assessment. The QOLI uses a 3-point rating scale for importance, and a 6-point rating scale for satisfaction. The QOLI is intended for individuals 17 years of age or older and takes approximately 5 minutes to complete. Scores are calculated by multiplying the importance score by the satisfaction score for each item, totaling, and dividing by the total areas that did not have a product of zero. This raw score is used to find the corresponding t-score from the QOLI manual. Normative data for the QOLI is based on a sample of nonclinical adults (N = 798) that was ethnically diverse. The test-retest reliability and internal consistency was shown to be excellent (Frisch, Cornell, Villanueva, & Retzlaff, 1992). The QOLI has also been shown to be reliable in terms of treatment validity in clinical settings (Frisch et al., 2005). Cronbach alpha estimates in
the present sample were lower .60 for the importance scale and acceptable .81 for the satisfaction scale. Less than 1% of data in the present sample were missing for the importance scale, and less than 1% were missing from the satisfaction scale.

**Depressive Symptoms.** The PHQ-9 is a self-administered depression screening tool that utilizes nine items, with a tenth item that assesses severity of symptoms with relation to every day functioning. The first nine items map onto the criteria from the *DSM-IV* for depressive disorders and are scored on a scale of 0 to 3 (0 = *not at all*, 3 = *nearly every day*), while the tenth item is on a 4-point scale (*not difficult at all to extremely difficult*). Total scores on the PHQ-9 can range from 0 to 27, with scores above 9 indicating moderate depressive symptoms. The PHQ-9 also showed favorable specificity (72%) and sensitivity (84%) when compared to other case-finding instruments for depression (Kroenke, Spitzer, & Williams, 2001). Cronbach’s alpha in present sample was acceptable (*α* = .74), with less than 1% missing data.

**Religiosity.** The Centrality of Religiosity Scale (CRS-15; Huber & Huber, 2012) is a 15-item self-report measure of the centrality, importance or salience of religious meanings in personality. It is a suitable measure of religiosity for at least Judaism, Christianity, and Islam. The participants respond to items on a five-point Likert-type scale with respect to how either frequency of religious exercise or importance of religion in their life. The scale assesses religiosity using five dimensions: intellectual, ideology, public practice, private practice, and religious experience. The individual receives a score on a 5-point scale expressing the religiosity of the individual (scoring convention; 1.0 - 2.0: not-religious, 2.1 - 3.9: religious, 4.0 - 5.0: highly religious). The CRS-15 was shown to correlate highly (*r* = .73) with self-reports in a sample of college students’
salience of religious identity, as well as self-reports of the importance of religion in college students’ daily life ($r = .78$). The CRS-15 also showed excellent internal consistency (Huber & Huber, 2012). Cronbach’s alpha in present sample was high ($\alpha = .93$).

**Affinity for the internet.** The affinity for the Internet measure consists of four questions that seek to assess the importance of Internet usage in the individual’s life. The measure utilizes a 7-point Likert-type scale ($1 = \text{strongly disagree}, \ 7 = \text{strongly agree}$), and participants who score 22 or lower on the scale are considered to be in the low affinity group whereas participants who score 23 or higher are classified as the high affinity group (Heo, Kim, & Won, 2011). The measure also showed good internal validity with a Cronbach’s alpha of 0.93 (Heo, Kim, & Won, 2011). Cronbach’s alpha in present sample was high ($\alpha = .81$), with less than 1% missing data.

**Social Validity Questionnaire.** The social validity questionnaire consists of five questions assessing the participants’ experience with the study. The questionnaire, created for this study, provided space for participants to answer yes or no questions and provide open-ended comments regarding the utility of the platform and writing exercise. The questionnaire contained questions regarding the ease of blog use, whether a person could see themselves continuing with the blog, as well as, an open-ended question about anything else they would like to add about their experience.

**Procedure**

Participants were invited to take part in a week-long study, for which the screening was conducted online. The participants were informed that the study was aimed at assessing attitudes toward blogging, as well as gathering data on their
experience of blogging for seven days. Upon receiving consent (Appendix A),
participants were given the PHQ-9 to assess their well-being and presence of depressive
symptomology. Those who qualified (having at least moderate depressive
symptomology, score >9) were invited to participate in the full study. They came to a lab
space and were administered the battery of measures (previously described).

Following the completion of the baseline measures, participants were gender-
matched to one of two writing condition groups, along with one of three comment level
groups within each writing group. A research assistant assisted the participant in setting
up a blog using Wordpress, or an offline platform using a Microsoft Word document
(according to the writing group to which they have been assigned. See Appendix C).

**Expressive Writing Blog.** The personal writing blogging condition consisted of
participants using expressive writing. Participants were encouraged to write about their
deepest thoughts and emotions with relation to the mental health issue they are currently
facing (See Appendix C for Expressive Writing Prompt).

**Filter Blog.** The filter writing blogging condition consisted of participants
writing about superficial topics. Participants were encouraged to write about topical,
nonpersonal subjects that are not of deep personal relevance to them (See Appendix C for
Filter Writing Prompt).

All participants were instructed to write on their own for seven days, receiving
scripted comments based on the comment groups to which they are assigned (e.g., low,
high). Comments were intended to be neutral in valence. Commenters’ names were
fictional, gender-neutral, and identical across blogs in order to minimize effects of
potential confounding variables.
Participants in the comment conditions were asked to check for comments on their blog and make note of them on the study checklist at the end of each study day (Appendix D). Comments in the study were submitted by researchers and consisted of either neutral, general statements or will mirror the subject matter of the blog (Appendix E).

**Control group.** Participants in the “no comment” group did not receive nor did they expect to receive comments on their writing. This group functioned as an online-diary control condition, removing the social aspect of the experience and focusing simply on the content of writing but using the same modality of expression (typing on a computer) as the active treatment conditions.

**Low comment condition.** Participants in the “low comment” condition received 1 comment per day at roughly the same times throughout each day.

**High comment condition.** Participants in the “high comment” condition received 3-4 comments per day at roughly the same times throughout each day.

**Post-testing.** On the eighth day from the start of the study, the participants met with the researcher to re-take the battery of measures, with the addition of the CRS. Each participant was also given the five question social validity survey. The participant was awarded one participation point on SONA per hour spent on the study, plus one credit for coming to campus for prescreens, blog setup, and post-screens for a total of 5 credits.
CHAPTER III

RESULTS

Analysis

A one-way mixed between-within subjects multivariate analysis of variance was performed to investigate the benefits of expressive writing when combined with the support of internet sociality using IBM SPSS Version 24.0 statistical software. Ten dependent variables were used: Hope, happiness, autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, self-acceptance, quality of life, and depressive symptoms. The independent variable was writing condition, with participants gender-matched into a filter or expressive writing condition (expressive writing condition = 12 females, 5 males; filter writing condition = 15 females, 2 males). Due to the small sample size, comment groups were collapsed within each writing condition. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted. Exploratory analyses using comment level for the independent variable were used to examine mean differences in the groups.

Internal reliability analyses of the measures used in this study were generally acceptable to high with the exception of the AHS. Results related to the AHS should be interpreted with caution, as the Cronbach’s alpha for the AHS may be representative of poor reliability for the measure.
Means were examined for analyses to determine potential trends in data given lower than optimal power to detect significance in the data. A series of Pearson’s Product-Moment Correlations were calculated using scores from each of the outcome measures and scores from the affinity for the internet measure. No significant correlations were detected regarding initial affinity for the internet scores and assigned groups (See correlation table in Appendix B). Independent samples t-tests were run to look for differences between groups at baseline for each measure. Groups differed significantly at baseline in personal growth (mean difference of 4.30, \( p = .033 \)) and purpose in life (mean difference of 5.41, \( p = .007 \)), where the filter writing group scored higher on each measure. Effect sizes were measured using partial eta squared, for which small (.01), medium (.06), and large (.14) effect sizes were interpreted according to Stevens (1992).

Results indicated a statistically significant main effect for writing groups on autonomy (\( F(1,32) = 8.4, p = .007; \eta_p^2 = .21 \)) and depression using the PHQ-9 (\( F(1,32) = 11.1, p = .002; \eta_p^2 = .26 \)). Groups saw in increase in autonomy and a decrease in depression. Results indicated nonsignificant results regarding the AHS (\( F(1,32) = 1.3, p = .255; \eta_p^2 = .04 \)), SHS (\( F(1,32) = 2.909, p = .098; \eta_p^2 = .083 \)), subscales of the PWBS including personal growth (\( F(1,32) = .551, p = .463; \eta_p^2 = .017 \)), purpose in life (\( F(1,32) = 1.00, p = .323; \eta_p^2 = .031 \)), and the QOLI (\( F(1,32) = .001, p = .970; \eta_p^2 = .000 \)).

There was a statistically significant interaction between expressive and filter writing groups on positive relations with others (\( F(1,32) = 5.451, p = .026; \eta_p^2 = .15 \)) as well as self-acceptance (\( F(1,32) = 7.082, p = .012; \eta_p^2 = .18 \)), with environmental mastery trending toward significance with a medium effect size (\( F(1,32) = 4.0, p = .053; \eta_p^2 = .12 \)).
Filter writing groups saw greater increases in all three cases. The groups did not differ significantly on AHS \((F(1,32) = .377, p = .543; \eta_p^2 = .012)\), SHS \((F(1,32) = .252, p = .619; \eta_p^2 = .008)\), subscales of the PWBS including autonomy \((F(1,32) = .296, p = .590; \eta_p^2 = .009)\), personal growth \((F(1,32) = .781, p = .384; \eta_p^2 = .024)\), purpose in life \((F(1,32) = .012, p = .912; \eta_p^2 = .000)\), QOLI \((F(1,32) = 1.361, p = .252; \eta_p^2 = .041)\), and PHQ-9 \((F(1,32) = 1.660, p = .207; \eta_p^2 = .049)\).

A series of dependent t-tests were performed to explore within-groups differences post-hoc. For participants in the expressive writing group, a statistically significant result was observed for PHQ-9 \((p = .041)\) (See table 2 for complete list of results).

For the filter writing group, statistically significant improvements were observed in the SHS \((p = .004)\), autonomy \((p = .005)\), self-acceptance \((p = .019)\), and PHQ-9 \((p = .015)\) measures (See table 3 for complete list of results).

An analysis of the social validity questionnaire indicated that most of the participants found Wordpress easy to navigate \((65.8\%)\), and found the study useful \((78.9\%)\). Regarding whether or not participants would continue to write in this way, 31.6 percent reported that they would continue, 28.9 percent reported that they may continue, and 34.6 percent reported that they would not continue. Many participants would recommend this writing to someone else \((81.6\%)\), and just over half added improvements for the study in the future \((25; 52.6\%)\). Many of the improvements regarded the type of subject matter, which depended on the group to which participants were assigned.
### Table 2

**Dependent T-Test Results for Expressive Writing Participants**

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean (pre – post)</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>1.889</td>
<td>3.628</td>
<td>0.855</td>
<td>0.085</td>
<td>3.693</td>
<td>2.209</td>
<td>17</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>1.000</td>
<td>11.109</td>
<td>2.618</td>
<td>-4.524</td>
<td>6.524</td>
<td>0.382</td>
<td>17</td>
</tr>
<tr>
<td>Hope</td>
<td>-0.389</td>
<td>2.831</td>
<td>0.667</td>
<td>-1.797</td>
<td>1.019</td>
<td>-0.583</td>
<td>17</td>
</tr>
<tr>
<td>Happiness</td>
<td>-1.014</td>
<td>3.465</td>
<td>0.817</td>
<td>-2.737</td>
<td>0.709</td>
<td>-1.242</td>
<td>17</td>
</tr>
<tr>
<td>Autonomy</td>
<td>-1.722</td>
<td>4.470</td>
<td>1.053</td>
<td>-3.945</td>
<td>0.500</td>
<td>-1.635</td>
<td>17</td>
</tr>
<tr>
<td>Environmental Mastery (PWBS)</td>
<td>0.278</td>
<td>3.862</td>
<td>0.910</td>
<td>-1.643</td>
<td>2.199</td>
<td>0.305</td>
<td>17</td>
</tr>
<tr>
<td>Personal Growth (PWBS)</td>
<td>-1.353</td>
<td>4.527</td>
<td>1.098</td>
<td>-3.680</td>
<td>0.975</td>
<td>-1.232</td>
<td>16</td>
</tr>
<tr>
<td>Positive Relations with Others (PWBS)</td>
<td>2.444</td>
<td>5.943</td>
<td>1.401</td>
<td>-0.511</td>
<td>5.400</td>
<td>1.745</td>
<td>17</td>
</tr>
<tr>
<td>Purpose in Life (PWBS)</td>
<td>0.333</td>
<td>5.466</td>
<td>1.288</td>
<td>-2.385</td>
<td>3.052</td>
<td>0.259</td>
<td>17</td>
</tr>
<tr>
<td>Self-Acceptance (PWBS)</td>
<td>0.333</td>
<td>3.726</td>
<td>0.878</td>
<td>-1.520</td>
<td>2.186</td>
<td>0.380</td>
<td>17</td>
</tr>
</tbody>
</table>

*Significant at $p < .05$

### Table 3

**Dependent T-Test Results for Filter Writing Participants**

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Mean (pre – post)</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>95% Confidence Interval of the Difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
<td>Upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>2.684</td>
<td>4.522</td>
<td>1.037</td>
<td>0.504</td>
<td>4.863</td>
<td>2.587</td>
<td>18</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>-0.736</td>
<td>7.459</td>
<td>1.711</td>
<td>-4.322</td>
<td>2.858</td>
<td>-0.431</td>
<td>18</td>
</tr>
<tr>
<td>Hope</td>
<td>-0.578</td>
<td>2.316</td>
<td>0.531</td>
<td>-1.695</td>
<td>0.537</td>
<td>-1.089</td>
<td>18</td>
</tr>
<tr>
<td>Happiness</td>
<td>-0.592</td>
<td>0.678</td>
<td>0.155</td>
<td>-0.918</td>
<td>-0.265</td>
<td>-3.806</td>
<td>18</td>
</tr>
<tr>
<td>Autonomy (PWBS)</td>
<td>-2.222</td>
<td>2.755</td>
<td>0.649</td>
<td>-3.592</td>
<td>-0.852</td>
<td>-3.421</td>
<td>17</td>
</tr>
<tr>
<td>Environmental Mastery (PWBS)</td>
<td>-1.157</td>
<td>3.184</td>
<td>0.730</td>
<td>-2.692</td>
<td>0.377</td>
<td>-1.585</td>
<td>18</td>
</tr>
<tr>
<td>Personal Growth (PWBS)</td>
<td>0.056</td>
<td>5.011</td>
<td>1.181</td>
<td>-2.436</td>
<td>2.548</td>
<td>0.047</td>
<td>17</td>
</tr>
<tr>
<td>Positive Relations with Others (PWBS)</td>
<td>-0.947</td>
<td>4.731</td>
<td>1.085</td>
<td>-3.227</td>
<td>1.333</td>
<td>-0.873</td>
<td>18</td>
</tr>
<tr>
<td>Purpose in Life (PWBS)</td>
<td>0.894</td>
<td>4.053</td>
<td>0.929</td>
<td>-1.059</td>
<td>2.849</td>
<td>0.962</td>
<td>18</td>
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<tr>
<td>Self-Acceptance (PWBS)</td>
<td>-2.684</td>
<td>4.346</td>
<td>0.997</td>
<td>-4.779</td>
<td>-0.589</td>
<td>-2.692</td>
<td>18</td>
</tr>
</tbody>
</table>

*Significant at $p < .05$
CHAPTER IV

DISCUSSION

The purpose of the current study was to examine the potential for blogging and social support to increase the effectiveness of expressive writing in individuals with clinically relevant depressive symptomology. In order to combine effects from previous literature from expressive writing with the potential for social support, the study asked participants to write about their most deeply personal issues in an online setting. The study also included participants who wrote about objective facts regarding their activities from the past day as well as potential future activities, which served as the filter, or control, condition. Previous studies have consistently found that expressive writing provides greater relief from depressive symptoms (Gortner, Rude, & Pennebaker, 2006). The current study adds to previous literature by more fully examining psychological well-being rather than just depressive symptomology. By using a range of different factors, this study is able to examine changes in well-being that may not be reflected directly in the depressive symptomology, but have a direct impact on life satisfaction and functioning.

The current study also sought to extend previous research by using a different dosage of writing. While previous studies used a period of three days (Pennebaker, 1997), the current study asked participants to write for seven days to capture clinically meaningful change in depressive symptoms. Though the duration of writing remained consistent with previous literature (20 minutes per session), examination of the blogs and
writing entries showed that some participants did not write for the full 20 minutes each session, and the majority of these participants were in the filter writing condition. Participants in the filter condition at times wrote as few as three sentences, when at other times they wrote several paragraphs. The effects of not utilizing the full 20 minutes of the suggested writing session are not clear. The participants in the filter condition may have found it difficult to write constantly for 20 minutes, or may have had less to say than those writing expressively. Although participants in the filter writing condition may not have written for an entire 20 minutes, they actually saw more psychological benefits than individuals in the expressive writing condition based on their scores on the personal relations with others and self-acceptance sections of PWBS. The improvement seen in this group may argue against the idea that participants in the filter writing condition may have been less engaged with the topic than participants in the expressive writing condition; a finding that was unanticipated and future researchers may want to assess the level of engagement of participants in their assigned writing topics.

Another difference in the current study compared to previous studies is the use of an electronic diary condition. The electronic diary condition served as a control for modality of expression; as participants in the comment conditions were unable to use a pen and paper to complete their writing. Given current stylus writing technology is improving, writing online may be able to soon be done in a more traditional way. The current study, however, controlled for the modality of expression and utilized typing for each of the groups. Utilizing electronic word processing, depressive symptoms of the expressive writing group did decrease significantly even with the lack of hand-written
subject matter, suggesting that the physical process of hand-writing a journal may not be necessary to affect change.

The first hypothesis for this study predicted that all participants would see benefits, with participants in the deeply personal writing group seeing more psychological benefits than those in the filter writing group. Regarding depressive symptomology, participants in both groups saw psychological benefits in a reduction in depressive symptoms, which partially supported the hypothesis. Depressive symptoms were hypothesized to differ between writing condition groups based on previous research (Pennebaker, 1997; Krpan et al., 2013), however this prediction was unsupported. Participants from both groups moved from clinically relevant depressive symptoms to sub-clinical levels, although this clinically significant change occurred more in the filter writing group (28% of filter participants, 12% of expressive participants). Some studies have found that participants who engage in writing exercises may see reductions in depressive symptoms regardless of the emotional valence of the entry (Baikie, Geerlings, & Wilhelm, 2012). The homogeneity of the groups with regard to exposure to social support through comments may have contributed to the decrease in depressive symptoms across both groups. The filter writing group may have also been experiencing the benefits of future oriented thinking, which has been shown to reduce depressive symptoms in writing exercises, and may have clearer effects in specific measures of psychological well-being and happiness (North et al., 2013).

Although some studies have shown psychological benefits from filter conditions, it is difficult to tell if the presence of social support caused the similar improvement in depressive symptomology as measured by the PHQ-9, or if it was due to some other
mechanism (e.g., goal attainment). The future-oriented writing style of the prompts in the filter condition may have also contributed to the benefits from the writing condition (North et al., 2013). Studies have also shown positive effects from writing online in smaller increments like (micro)blogs regardless of subject matter, which could also account for the similarity in changes in depressive symptoms for both groups (Stavrositu & Sundar, 2008; 2012).

Another main effect found in the study is that both groups experienced a significant increase in autonomy as measured by the PWBS. The subject matter of both writing groups could be expected to increase autonomy due to the nature of the prompt. The expressive writing group may have felt a sense of autonomy due to the self-propelled nature of the reduction in their depressive symptoms. The pro-active style of organizing and processing deeply personal issues could have given the individual a feeling of independence and control over their circumstances. Conversely, the filter writing prompt may have allowed individuals to literally organize their coming days and months to give them a clearer picture of their goals. The simple act of typing their goals and expectations for the next few months could be expected to increase their feeling of control over the plans that they had made.

Participants in the filter writing group experienced more positive improvement in psychosocial measures of this study when compared directly to the expressive writing group. Regarding positive relations to others (a subscale of the PWBS), the differences between groups was not due to positive effects of the filter writing group, but rather a negative directional effect in the expressive writing group. Due to the equal number of participants using online and offline platforms for writing, positive relations with others
and self-acceptance may be related to the subject matter of the participants in the filter writing group. Previous research regarding diary writing did not use psychological well-being scales, hope scales, happiness scales, or quality of life measures, which may be a more nuanced view of well-being than measuring only symptoms of depression. One explanation for the filter group experiencing more positive psychological outcomes than the expressive writing group is that they used future-oriented writing tasks as opposed to past-oriented processing. With a shifted focus to the future, participants may have found more reasons to be happy and felt more control in the areas which they improved in the most. Although expressive writing could have provided an outlet for processing and organizing difficult experiences, filter writing may have provided a more pragmatic outlet.

Another explanation for the difference in psychological well-being benefits may be the difficulty of writing about deeply personal subjects in the public eye without appropriate encouragement and support. Participants in the expressive writing group were not only asked to write about potentially difficult material, but were asked to do so in a public (albeit anonymous) way. Regardless of anonymity, the author of the entry might still feel a personal connection to difficult writing that is being published. The expression of deeply personal issues may be helpful in organizing and exploring difficult experiences, which may account for the expected decrease in depressive symptoms. A side-effect of posting difficult materials may be the potential for the individual to be unwilling to fully engage in the deeply personal writing style and truly commit to exploring difficult and perhaps painful issues publicly. This would be an opposing view than what Pennebaker and other researchers have proposed. A way to combat the
potential anxiety of writing publicly may be to show appropriate support for individuals writing about deeply personal experiences, such as in a closed community of bloggers led by a mental health professional. In effect, the added effectiveness of social support may be contingent upon the type of support being given. If the valence of the support matches the difficulty of the writing, additional positive psychological outcomes could be achieved. An alternative explanation for this finding may be that the focus on deeply personal and troubling material may in essence create a situation in which the writer is asked to ruminate on difficult or painful experiences. Rumination can lead to less subjective happiness and hopelessness. A possible change to the probe as when participants are asked to shift their focus from negative to satisfying life experiences, may be a therapeutically useful alternative to writing about difficult, painful material. Future research may benefit in examining the effect of purely focused writing on the difficult experiences versus writing in which the shift from the negative to positive writing occurs.

The second hypothesis for the study predicted that individuals in the high comment group will see more positive psychological benefits than those in the low or no comment groups. No significant differences were found between comment level groups regarding positive psychological outcomes. The current study may not have had appropriate power to detect significant differences between groups. Similarly, due to the lack of power, the comparison of online and offline digital writing platforms for each writing condition could not be examined individually. However, the addition of the offline (thus no comment condition) provides systematic and structured variance among the groups.
The current study not only used an online writing platform, but used neutral comments on participants’ blogs to reflect a social media environment. The neutral comments were designed to represent attention on the blogs and not necessarily empathy or emotional support. A neutrally positive comment on a blog was to represent something similar to a “like” on Facebook or other social media sites. By using neutral comments, the study sought to replicate the experience of supportive comments without the need for subjective interpretation by the participant. The comments also served to minimize variance in participants’ experiences by providing a uniform, scripted response. However, individuals receiving neutral comments on deeply personal writing may not have felt supported or understood by the comments that did not match the level of intimacy that the blog itself used. Individuals in the filter writing condition, however, were writing about what could be understood as neutral subjects and received neutral comments in return, which may have been more in line with expectations for comments on their blogs. The lack of true empathy in the comments on the expressive writing blogs may not have met expectations participants had for feedback, and could explain the differences in the experiences for the two groups in personal relations and self-acceptance. Comments that lacked a personal, empathetic response and seemed robotic may have made for a poor disclosure experience, affecting both the individual’s positive relations with others as well as how he or she may view his or her self. Again, the goal of the comments in this study was to make the author feel heard and was not intended to be therapeutic. Future studies may want to consider incorporating empathetic responses that more appropriately reflect support in the comment. The study may even include volunteer participants in a community of expressive writing, providing a set of guidelines
and appropriate responses when providing empathetic support. Active participants providing empathetic feedback may give individuals appropriate feedback to match expectations regarding deeply personal writing. Also, this model may actually allow individuals to pursue comments for further support and feedback, which would be a more accurate model of support from an online platform. Providing support to others in a community could also allow an engagement in generativity, which could enhance the therapeutic effects for the community.

The third hypothesis was that the amount of feedback would interact with the type of writing such that the high comment group in the expressive writing condition would see the greatest psychological benefit. Due to the small sample size, the comment groups were collapsed and, therefore, were not able to be analyzed for differences.

The current study used the CRS to measure the level of religiosity in participants in their post-intervention meeting with the researcher. The measure was included in order to explore potential benefits of individuals who chose to write about religious/spiritual topics in their expressive writing entries. Only one participant used religious writing in her expressive writing blog, and she only did so during one entry. No other bloggers used religious/spiritual themes ($N = 11, 14.7\%$; 2 individuals were highly religious), and thus this avenue could not be explored. However, future research should include a prompt that includes the potential to write using a spiritual or religious perspective. The inclusion of a prompt that includes a broader scope of perspective in the participants’ writing may open religious participants up to incorporating their spirituality, thus including a wider picture of the participant’s experience.
The affinity for the internet measure was also used to explore the correlations between psychological benefits from blogging and how important the internet is to an individual. Higher affinity for the internet was hypothesized to be correlated with more positive psychological benefits from blogging, however the pattern for which this may occur across the outcome measures for this study is unknown. The correlation between initial affinity for the internet scores and individuals’ positive psychological outcomes were not significantly correlated for any of the psychological well-being measures used in the study.

The present study represents an exploration into the utilization of social media as help for depressive symptomology. A methodological strength of this study was the utilization of multiple platforms in the expressive writing paradigm. The study was able to include a social medium, which is a prominent part of life in the world today. The inclusion of a social component allows for the extension of the use of writing as a way to address depressive symptoms in an accessible, relevant way. The inclusion of an electronic diary condition provided a control for the online conditions, but also provided exploratory data on whether or not writing could remain an effective intervention when moved to electronics. While the methodological design included a control group, the study did not have appropriate power to analyze the electronic diary group for consistency with previous studies.

Another methodological strength of the current study was the systematic and structured variance provided in the comparison groups regarding platform. With an equal number of each comment level in the filter and expressive writing conditions, it allowed for a clearer picture of how well writing interventions may generalize to different writing
platforms. Expressive writing, which has been used as a journaling technique in therapy, may also translate to an online platform that includes the support of other individuals. The study is also able to examine the extended utility of filter writing that takes place online.

In addition, the use of multiple measures of psychological well-being allowed for a more nuanced picture of the aspects of well-being affected by the writing exercise. Though each writing condition experienced a significant decrease in symptoms of depression, the utilization of other psychological well-being measures explored different ways in which neutral comments may be more effective with less personal, more objective subject matter. The differences in subjective happiness, autonomy, environmental mastery, and self-acceptance between the filter group and expressive group provide a more complete picture of the benefits of the writing styles utilized in the current study.

Limitations

Along with its strengths, limitations of the present study should be acknowledged. First, the current study utilized self-report measures that were scored anonymously upon screening, but were administered face-to-face during the experiment. Screening measures administered face-to-face, especially mental health screening, may be subject to social desirability bias and desire to meet researcher expectations. Ten students who screened positive for clinically relevant depressive symptoms showed a decrease to below clinical relevance (9 or below) from the time of online screening to face-to-face screening. In order to control for a potential bias after students were showing lower PHQ-9 scores in person, the study attempted to control for this by having the researcher
briefly leave the room while the participant completed the screening measure. Along with potential bias, the PHQ-9 was administered seven days apart, and instructions for the PHQ-9 ask the participant to consider the past two weeks. Since this timeframe is longer than the actual study, this may have led to an underestimation of mood effects. The current study also did not include a follow-up assessment to examine the potential long-term effects of the writing condition and whether participants continued to write after the exercise was completed. Future research would benefit from including a follow-up data point to observe the maintenance of treatment effects and behavioral engagement.

In addition, participants were instructed to complete the writing exercises on their own, without supervision or reminders from researchers. At times, participants did not follow their writing prompts, both in duration of writing and subject matter. The variation on compliance with writing prompts causes problems with the homogeneity of groups and makes drawing firm conclusions difficult. Three individuals in the filter writing group, for example, were less objective than was intended by the prompt they were given, and the details of their writing may have been more expressive as a result. Others in the filter writing group failed to follow the 7 different prompts they were given, one for each day. Instead, some participants used the first prompt for each day. Participants in the filter writing group also did not show consistent blog lengths, and some were only three sentences long. According to other blogs the participants had written in the exercise, a 20 minute writing session would have been longer. Future studies utilizing electronic means may want to include a suggestion for the length of the entry in terms of characters or word count to correct for this suggestion. The 20 minute
length of the prompt is used as well for participants who are writing by hand, so the length may need to be adjusted in terms of typing speed and word count.

The current study lacked the statistical power to detect statistical significance between its intended factors despite extended recruitment efforts. The study was unable to draw conclusions regarding specific levels of factors. Also, by utilizing a gender-matched randomization technique, true randomization was not present in the sample, and therefore its generalization is limited. However, the strength in utilizing this technique is that it ensures equal representation of genders in each writing group. Future studies may examine the utility of this particular intervention specifically in male participants, as men utilize traditional mental health services at a lower rate than women (Ogrodniczuk et al., 2016).

Finally, an analysis of information expressed in the blogs indicated that some participants were also utilizing therapy services outside of this study, and effects from outside therapy services were not evaluated or included in the analysis. Future research should also inquire at baseline and a post-intervention as to whether participants with depression are currently receiving therapy services and what type (e.g., psychotherapy, medication management, combination) and when these services began.

**Implications**

The findings in the present study partially converge with existing literature to support the utility of writing exercises to reduce depressive symptoms. However, these results differ from previous studies with respect to the lack of difference between filter and expressive writing groups (Pennebaker, 1997). The current study suggests that writing for seven days, regardless of deeply personal subject matter, can have a positive
effect on depressive symptoms. One factor that may influence the positive outcome of a writing exercise is the attainment of a goal. Some studies suggest that merely completing a goal that one has set for one’s self, such as completing a study, can cause positive psychological outcomes for individuals with depression.

Another factor that may influence the effects of writing exercises outside of depressive symptoms may be the social support received by the person writing. The results suggest that neutral comments on filter subject matter may provide more positive psychological well-being outcomes than neutral comments on deeply personal writing. While neutral comments did not impede the effects of writing on depressive symptoms specifically, the comments seem to have had statistically significant differences in effects for measures of happiness, autonomy, environmental mastery, and self-acceptance. This difference suggests that, with regard to writing in a social setting, the type of feedback received is an important part of the benefits received in the process. The lack of empathetic, genuine responses to deeply personal writing may have a less positive effect than comments that match the neutrality of filter writing. Meeting feedback expectations of the author of the blog may enhance the effects of expressive writing through social support.

The current study also shows that dosage effects may have a larger effect on positive outcomes than other research has suggested. Since the filter writing group saw more positive psychological outcomes overall, the overall engagement in the writing exercise for a length of seven days may have a larger effect than previously thought. Engagement in an achievable goal over a week-long exercise may combat the disinterest in activities that comes with depression (Baikie, Geerlings, & Wilhelm, 2012). Also,
given that individuals in the filter writing condition may not have consistently written for the 15-20 minutes suggested by the prompt, time spent writing may not be as important for objective writing as the number of days spent writing. Understanding the effects of comments and engagement on writing exercises the social settings may be the key to enhancing the effects of writing exercises in general. Future research may investigate the utility of objective writing related to personal goals as a writing technique. Future studies should explore dosage effects regarding time spent writing on objective subject matter. Because of the lack of deeply personal material, a more objective, future-oriented writing style may prove more practical in an online setting.

The current study showed some important, though unexpected, outcomes that are relevant for future writing studies and writing prompts. Combining the effects of a proven writing technique with access to an online community of support is not out of the question, but a foundation of trust could be an important component in the equation. While it seems that many types of writing are beneficial, a safe and reinforcing environment may be key when writing is combined with social support. The disclosure and support environment may be the most important elements for a more accessible intervention that provides both a reprieve from depressive symptoms and a sense of support from a cyber community.
REFERENCES


APPENDIX A

Informed Consent

University of Colorado
Colorado Springs (UCCS)

Consent to be a Research Subject

**Title**: The Merits of Blogging as a Therapeutic Intervention

**Principal Investigator**: Nathan L. Baumann

**Faculty Supervisor**: Leilani Feliciano, Ph.D.

**Introduction:**
You are being invited to join us in a research study. This form is designed to tell you everything you need to think about before you decide to consent (agree) to be in the study or not to be in the study. A member of the research team will describe this study to you and answer any questions. **It is entirely your choice.**

Before making your decision:

- Please carefully read this form or have it read to you.
- Please ask questions about anything that is not clear.

Feel free to take your time thinking about whether you would like to participate. By signing this form you will not give up any legal rights. **If you decide to take part in the study, you have the right to change your mind later on and withdraw from the research study. You can also skip any questions on the questionnaires that you do not wish to answer.**

**Study Overview:**
This study will look at attitudes toward blogging and how people like the experience of writing for seven days.
Procedures

After completing the initial interview and measures, you will be asked to blog for 10-15 minutes a day for 7 days on your own. At the end of the 7 days, you will be asked to meet one last time with a researcher to retake the measures and will be debriefed. The measures should not take more than 30 minutes to an hour.

Other people in this study:

Up to 90 UCCS students will be participating in this study.

Risks and Discomforts:
This study is focused on examining the attitudes toward blogging and may allow you to express yourself in ways you had not had access to in the past, and difficult subjects may come up. These difficult subjects may cause some psychological discomfort. You will be given some resources and contact information for programs that offer support if this should occur.

Benefits:
We expect this experiment to benefit you by providing you a new way of expressing yourself (blogging) and also providing access to social support through the use of technology. This study is designed for the researcher to learn more about the ways in which people may use blogging.

Compensation:
Participants will be offered one SONA credit for each hour of participation, as well as an extra credit for both the initial meeting with the researcher and the debriefing meeting.

Confidentiality:
Certain rights are guaranteed to you as a research participant. First, you can be assured that your responses to the questionnaires are anonymous. Code numbers rather than names will be used to on all forms and data. All data will be stored in a locked cabinet in Dr. Feliciano’s research lab. Online data will be stored using code numbers only in a password protected and encrypted file. Any information obtained in connection with this study that can be identified with you or your significant other/family member will remain confidential. Only authorized staff personnel will have access to the information that you provide in the study. Any publications or reports that come out of this study will not contain any individual names or identities. Data collected will be kept for a period of 3 years and then destroyed.

Certain offices and people other than the researchers may have access to study records. Government agencies and UCCS employees overseeing proper study conduct may look at your study records. These offices include the UCCS Institutional Review Board, and the UCCS Office of Sponsored Programs. UCCS will keep any research records confidential to the extent allowed by law. A study number rather than your name will be used on study records wherever possible. Study records may be subject to disclosure pursuant to a court order, subpoena, law or regulation.
**Voluntary Participation and Withdrawal from the Study**

Taking part in this study is voluntary. You have the right to leave a study at any time without penalty. You may refuse to do any procedures you do not feel comfortable with, or answer any questions that you do not wish to answer. If you withdraw from the study, you may request that your research information not be used by contacting the Principal Investigator listed above and below.

**Contact Information**

Contact (PI’s info): Nate Baumann, BA. Email: nbaumann@uccs.edu

Supervisor: Leilani Feliciano, PhD. Email: LFelicia@uccs.edu

- if you have any questions about this study or your part in it,
- if you have questions, concerns or complaints about the research, or
- if you would like information about the survey results when they are prepared.

Contact the Research Compliance Coordinator at 719-255-3903 or via email at irb@uccs.edu:

- if you have questions about your rights as a research participant, or
- if you have questions, concerns or complaints about the research.

**Consent**

A copy of this consent form will be provided to you.

I understand the above information and voluntarily consent to participate in the research. By signing this consent, I am confirming that I am 18 years of age or older.

Signature of Participant                 Date
## APPENDIX B

### Correlation Table

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*Correlation is significant at the 0.05 level (2-tailed).*

**Correlation is significant at the 0.01 level (2-tailed).**
APPENDIX C

Writing Prompts

Expressive Writing Prompt

The expressive writing blog will write about primarily personal issues, thoughts, and experiences such as daily experiences and coping mechanisms and strategies. Participants using the EWP will be instructed to write one post per day, writing for at least 15 minutes, focusing on something that pertains directly to their life.

For the next seven days, we would like for you to write one post each day about your very deepest thoughts and feeling about the mental health challenge you are dealing with currently. In your writing, we'd like you to really let go and explore your very deepest emotions and thoughts. You may write about the same general issues or experiences on all days of writing or on different topics each day. Not everyone has had a single depressive episode but all of us have had major conflicts or stressors – and you can write about these as well. All of your writing will be completely anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, to continue to do so for 15 minutes. Feel free to set a timer.

Filter Writing Prompt

The filter blog will write mainly about daily activities, future goals, and recalling things that the participants have done that day. Participants will be asked to avoid using emotion and feelings when writing, as the prompts will remind them that the exercise is geared toward being as objective and accurate as possible.
For the next seven days, I would like you to write one post about how you use your time. Each session, you will get different writing tasks on the way you spend your time. In your writing, we'd like you to be as objective as possible, by concentrating on the facts and details of how you spend your time. We are not interested in your emotions or opinions, rather we want you to try to be completely objective. Feel free to be as detailed as possible. In today's writing, your task is to describe what you did yesterday from the time you got up until the time you went to bed. For example, you might start when your alarm went off and you got out of bed. You could include the things you ate, where you went, which buildings or objects you passed by as you walked from place to place. The most important thing in your writing, however, is for you to describe what you did as accurately and as objectively as possible.

For writing tasks 2–7 instructions were altered as follows: task 2 focused on ‘what you have done today since you woke up’; task 3 on ‘what you will do as soon as this writing session is over until you go to bed tonight’; task 4 on ‘what you will be doing over the next week,’ task 5 on 'what you will be doing in the next month,' task 6 on 'what you will likely be doing in the next 3 months,' task 7 on 'what you will likely be doing in the next 6 months.'

**No Comment Writing Prompts**

**Expressive Writing Prompt**

Individuals in the EWP without comments will be asked to write one entry per day for at least 15 minutes, acting as a traditional EP diary group. Participants will be asked to write about primarily personal issues, thoughts, and emotions.
For the next seven days, we would like for you to write one entry each day about your very deepest thoughts and feeling about the mental health challenge you are dealing with currently. In your writing, we'd like you to really let go and explore your very deepest emotions and thoughts. You may write about the same general issues or experiences on all days of writing or on different topics each day. Not everyone has had a single depressive episode but all of us have had major conflicts or stressors – and you can write about these as well. All of your writing will be completely anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, to continue to do so for 15 minutes. Feel free to set a timer.

Filter Writing Prompt

The filter writing no comment group will write mainly about daily activities, future goals, and recalling things that the participants have done that day. Participants will be asked to avoid using emotion and feelings when writing, as the prompts will remind them that the exercise is geared toward being as objective and accurate as possible.

For the next seven days, I would like you to write one entry about how you use your time. Each session, you will get different writing tasks on the way you spend your time. In your writing, we'd like you to be as objective as possible, by concentrating on the facts and details of how you spend your time. We are not interested in your emotions or opinions, rather we want you to try to be completely objective. Feel free to be as detailed as possible. In today's writing, your task is to describe what you did yesterday from the time you got up until the time you went to bed. For
example, you might start when your alarm went off and you got out of bed. You could include the things you ate, where you went, which buildings or objects you passed by as you walked from place to place. The most important thing in your writing, however, is for you to describe what you did as accurately and as objectively as possible.

For writing tasks 2–7 instructions were altered as follows: task 2 focused on ‘what you have done today since you woke up’; task 3 on ‘what you will do as soon as this writing session is over until you go to bed tonight’; task 4 on ‘what you will be doing over the next week,’ task 5 on ‘what you will be doing in the next month,’ task 6 on ‘what you will likely be doing in the next 3 months,’ task 7 on ‘what you will likely be doing in the next 6 months.’
APPENDIX D

Comment Tracking

<table>
<thead>
<tr>
<th>Blogging Day</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
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<tbody>
<tr>
<td>Number of Comments</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Notes</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX E

Sample Researcher Generated Comments

Blanket statements:

- Nice post, thanks for sharing!
- This was interesting, I appreciate you sharing it!
- I appreciated this post!
- I’m glad you shared this!

Mirroring statements:

- That’s a good point, it’s nice to see someone blogging about…
- Good idea, I’ve never seen someone blog about...
- Thanks for sharing, reading about _____ is interesting.
3. Ryff’s Psychological Well-Being Scales (PWB), 42 Item version

Please indicate your degree of agreement (using a score ranging from 1-6) to the following sentences.

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1 2 3 4 5 6</td>
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<tr>
<td>4</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1 2 3 4 5 6</td>
<td></td>
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<tr>
<td>6</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1 2 3 4 5 6</td>
<td></td>
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<tr>
<td>13</td>
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<td></td>
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<tr>
<td>14</td>
<td>1 2 3 4 5 6</td>
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<td>15</td>
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<td>20</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>Statement</td>
<td>1</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>---</td>
</tr>
<tr>
<td>22</td>
<td>I enjoy personal and mutual conversations with family members or friends.</td>
<td>1</td>
</tr>
<tr>
<td>23</td>
<td>I don't have a good sense of what it is I'm trying to accomplish in life.</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>I like most aspects of my personality.</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>I have confidence in my opinions, even if they are contrary to the general consensus.</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>I often feel overwhelmed by my responsibilities.</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>I do not enjoy being in new situations that require me to change my old familiar ways of doing things.</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>People would describe me as a giving person, willing to share my time with others.</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>I enjoy making plans for the future and working to make them a reality.</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>In many ways, I feel disappointed about my achievements in life. It's difficult for me to voice my own opinions on controversial matters.</td>
<td>1</td>
</tr>
<tr>
<td>31</td>
<td>I have difficulty arranging my life in a way that is satisfying to me.</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>For me, life has been a continuous process of learning, changing, and growth.</td>
<td>1</td>
</tr>
<tr>
<td>33</td>
<td>I have not experienced many warm and trusting relationships with others.</td>
<td>1</td>
</tr>
<tr>
<td>34</td>
<td>Some people wander aimlessly through life, but I am not one of them.</td>
<td>1</td>
</tr>
<tr>
<td>35</td>
<td>My attitude about myself is probably not as positive as most people feel about themselves.</td>
<td>1</td>
</tr>
<tr>
<td>36</td>
<td>I judge myself by what I think is important, not by the values of what others think is important.</td>
<td>1</td>
</tr>
<tr>
<td>37</td>
<td>I have been able to build a home and a lifestyle for myself that is much to my liking.</td>
<td>1</td>
</tr>
<tr>
<td>38</td>
<td>I gave up trying to make big improvements or changes in my life long time ago.</td>
<td>1</td>
</tr>
<tr>
<td>39</td>
<td>I know that I can trust my friends, and they know they can trust me.</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>I sometimes feel as if I've done all there is to do in life.</td>
<td>1</td>
</tr>
<tr>
<td>41</td>
<td>When I compare myself to friends and acquaintances, it makes me feel good about who I am.</td>
<td>1</td>
</tr>
</tbody>
</table>
# PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

**NAME:** ___________________________  **DATE:** ___________________________

Over the last 2 weeks, how often have you been bothered by any of the following problems?
*(use "v" to indicate your answer)*

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed. Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Thoughts that you would be better off dead, or of hurting yourself</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

*Add columns:*

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
</table>

_Total:_

(Health care professional: For interpretation of TOTAL please refer to accompanying scoring card)

10. If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

<table>
<thead>
<tr>
<th></th>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

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A265518 10-04-2003
Scale (taken from http://www.spc.sas.upenn.edu/hopescale.pdf)

Directions: Read each item carefully. Using the scale shown below, please select the number that best describes YOU and put that number in the blank provided.

1. = Definitely False
2. = Mostly False
3. = Somewhat False
4. = Slightly False
5. = Slightly True
6. = Somewhat True
7. = Mostly True
8. = Definitely True

_ _ 1. I can think of many ways to get out of a jam.
_ _ 2. I energetically pursue my goals.
_ _ 3. I feel tired most of the time.
_ _ 4. There are lots of ways around any problem.
_ _ 5. I am easily downed in an argument.
_ _ 6. I can think of many ways to get the things in life that are important to me.
_ _ 7. I worry about my health.
_ _ 8. Even when others get discouraged, I know I can find a way to solve the problem.
_ _ 9. My past experiences have prepared me well for my future.
_ _10. I've been pretty successful in life.
_ _11. I usually find myself worrying about something.
_ _12. I meet the goals that I set for myself.

Scoring:

Items 2, 9, 10, and 12 make up the agency subscale.
Items 1, 4, 6, and 8 make up the pathway subscale.

Researchers can either examine results at the subscale level or combine the two subscales to create a total hope score.
Subjective Happiness Scale (SHS)

By Sonja Lyubominsky, Ph.D.

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

1. In general, I consider myself:

   1  2  3  4  5  6  7
   not a very happy person
   a very happy person

2. Compared to most of my peers, I consider myself:

   1  2  3  4  5  6  7
   less happy
   more happy

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

   1  2  3  4  5  6  7
   not at all
   a great deal

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

   1  2  3  4  5  6  7
   not at all
   a great deal

Note: Item #4 is reverse coded.
Centrality of Religiosity

Please answer these questions using a 5-point scale with regard to frequency or importance (1 = Not at all, Never; 5 = All the time, Definitely, Very Important)

How often do you think about religious issues?
To what extent do you believe that God or something divine exists?
How often do you take part in religious services?
How often do you pray?
How often do you experience situations in which you have the feeling that God or something divine intervenes in your life?
How interested are you in learning more about religious topics?
To what extent do you believe in an afterlife—e.g., immortality of the soul, resurrection of the dead or reincarnation?
How important is it for you to take part in religious services?
How important is personal prayer for you?
How often do you experience situations in which you have the feeling that God or something divine wants to communicate or reveal something to you?
How often do you keep yourself informed about religious questions through radio, television, internet, newspapers, or books?
In your opinion, how probable is it that a higher power really exists?
How important is it for you to be connected to a religious community?
How often do you pray spontaneously when inspired by daily situations?
How often do you experience situations in which you have the feeling that God or something divine is present?
DIRECTIONS
This survey asks how satisfied you are with parts of your life such as your work and your health. It also asks how important these things are to your happiness. Special definitions for words like "money," "work," and "play" keep these definitions in mind as you answer the questions. Answer every question, even if it does not seem to apply to you. It is your feelings and opinions that are important, so there are no right or wrong answers. Just give the answers that best describe you.
The survey asks you to describe how important certain parts of your life (such as work and health) are and how satisfied you are with them.
Important means how much this part of your life adds to your overall happiness. You can say how important something is by picking one of three choices: "Not important" (0), "Important" (1), or "Extremely Important" (2).

HEALTH is being physically fit, not sick, and without pain or disability.
1. How important is HEALTH to your happiness?
   Very Somewhat A Little Somewhat Very
   Not Important Important Extremely Important

2. How satisfied are you with your HEALTH?
   Very Somewhat A Little Somewhat Very
   DISATTACHED SATISFIED

SELF-ESTEEM means liking and respecting yourself in light of your strengths and weaknesses, successes and failures, and ability to handle problems.
3. How important is SELF-ESTEEM to your happiness?
   Very Somewhat A Little Somewhat Very
   Not Important Important Extremely Important

4. How satisfied are you with your SELF-ESTEEM?
   Very Somewhat A Little Somewhat Very
   DISATTACHED SATISFIED

Satisfied means how well your needs, goals, and wishes are being met in this area of your life. You can say how satisfied you are by picking one of six choices from "Very Dissatisfied" (-3) to "Very Satisfied" (+3).
For each question, blacken the circle that best describes you.
EXAMPLE:
This is how you would answer if WORK was "Important" to your overall happiness:

GOALS AND VALUES are your beliefs about what matters most in life and how you should live, both now and in the future. This includes your goals in life, what you think is right or wrong, and the purpose or meaning of life as you see it.
5. How important are GOALS AND VALUES to your happiness?
   Very Somewhat A Little Somewhat Very
   Not Important Important Extremely Important

6. How satisfied are you with your GOALS AND VALUES?
   Very Somewhat A Little Somewhat Very
   DISATTACHED SATISFIED

MONEY is made up of three things. It is the money you earn, the things you own (like a car or furniture), and believing that you will have the money and things that you need in the future.
7. How important is MONEY to your happiness?
   Very Somewhat A Little Somewhat Very
   Not Important Important Extremely Important

8. How satisfied are you with the MONEY you have?
   Very Somewhat A Little Somewhat Very
   DISATTACHED SATISFIED
WORK means your career or how you spend most of your time. You may work at a job, at home taking care of your family, or at school as a student. WORK includes any duties on the job, the money you earn (if any), and the people you work with. (If you are unemployed, retired, or can't work, you can still answer these questions.)

9. How important is WORK to your happiness?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Important</td>
<td>Important</td>
<td>Extremely Important</td>
</tr>
</tbody>
</table>

10. How satisfied are you with your WORK? (If you are not working, say how satisfied you are about not working.)

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<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Satisfied</td>
<td>A Little Satisfied</td>
<td>Somewhat Satisfied</td>
<td>Dissatisfied</td>
</tr>
</tbody>
</table>

PLAY is what you do in your free time to relax, have fun, or improve yourself. This could include watching movies, visiting friends, or pursuing a hobby like sports or gardening.

11. How important is PLAY to your happiness?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Important</td>
<td>Important</td>
<td>Extremely Important</td>
</tr>
</tbody>
</table>

12. How satisfied are you with the PLAY in your life?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Satisfied</td>
<td>A Little Satisfied</td>
<td>Somewhat Satisfied</td>
<td>Dissatisfied</td>
</tr>
</tbody>
</table>

CREATIVITY is using your imagination to come up with new and clever ways to solve everyday problems or to pursue a hobby like painting, photography, or needlework. This can include decorating your home, playing the guitar, or finding a new way to solve a problem at work.

15. How important is CREATIVITY to your happiness?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Important</td>
<td>Important</td>
<td>Extremely Important</td>
</tr>
</tbody>
</table>

16. How satisfied are you with your CREATIVITY?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Satisfied</td>
<td>A Little Satisfied</td>
<td>Somewhat Satisfied</td>
<td>Dissatisfied</td>
</tr>
</tbody>
</table>

HELPING means helping others in need or helping to make your community a better place to live. HELPING can be done on your own or in a group like a church, a neighborhood association, or a political party. HELPING can include doing volunteer work at a school or giving money to a good cause. HELPING means helping people who are not your friends or relatives.

17. How important is HELPING to your happiness?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Important</td>
<td>Important</td>
<td>Extremely Important</td>
</tr>
</tbody>
</table>

18. How satisfied are you with the HELPING you do?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Satisfied</td>
<td>A Little Satisfied</td>
<td>Somewhat Satisfied</td>
<td>Dissatisfied</td>
</tr>
</tbody>
</table>

LEARNING means gaining new skills or information about things that interest you. LEARNING can come from reading books or taking classes on subjects like history, car repair, or using a computer.

13. How important is LEARNING to your happiness?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Important</td>
<td>Important</td>
<td>Extremely Important</td>
</tr>
</tbody>
</table>

14. How satisfied are you with your LEARNING?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Satisfied</td>
<td>A Little Satisfied</td>
<td>Somewhat Satisfied</td>
<td>Dissatisfied</td>
</tr>
</tbody>
</table>

LOVE is a very close romantic relationship with another person. LOVE usually includes sexual feelings and feeling loved, cared for, and understood. (If you do not have a LOVE relationship, you can still answer these questions.)

19. How important is LOVE to your happiness?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Important</td>
<td>Important</td>
<td>Extremely Important</td>
</tr>
</tbody>
</table>

20. How satisfied are you with the LOVE in your life? (If you are not in a LOVE relationship, say how satisfied you feel about not having a LOVE relationship.)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very Satisfied</td>
<td>A Little Satisfied</td>
<td>Somewhat Satisfied</td>
<td>Dissatisfied</td>
</tr>
</tbody>
</table>
FRIENDS are people (not relatives) you know well and care about who have interests and opinions like yours. FRIENDS have fun together, talk about personal problems, and help each other out. (If you have no FRIENDS, you can still answer these questions.)

21. How important are FRIENDS to your happiness?
- Not Important
- Important
- Extremely Important

22. How satisfied are you with your FRIENDS? (If you have no FRIENDS, say how satisfied you are about having no FRIENDS)
- Very Somewhat
- A Little
- A Little Somewhat
- Very DISSATISFIED
- SATISFIED

CHILDREN means how you get along with your child (or children). Think of how you get along as you care for, visit, or play with your child. (If you do not have CHILDREN, you can still answer these questions.)

23. How important are CHILDREN to your happiness? (If you have no CHILDREN, say how important having a child is to your happiness.)
- Not Important
- Important
- Extremely Important

24. How satisfied are you with your relationships with your CHILDREN? (If you have no CHILDREN, say how satisfied you are about not having children.)
- Very Somewhat
- A Little
- A Little Somewhat
- Very DISSATISFIED
- SATISFIED

RELATIVES means how you get along with your parents, grandparents, brothers, sisters, aunts, uncles, and in-laws. Think about how you get along when you are doing things together like visiting, talking on the telephone, or helping each other out. (If you have no living RELATIVES, blacken the # [Not Important] circle for question 25 and do not answer question 26.)

25. How important are RELATIVES to your happiness?
- Not Important
- Important
- Extremely Important

26. How satisfied are you with your relationships with RELATIVES?
- Very Somewhat
- A Little
- A Little Somewhat
- Very DISSATISFIED
- SATISFIED

HOME is where you live. It is your house or apartment and the yard around it. Think about how nice it looks, how big it is, and your rent or house payment.

27. How important is your HOME to your happiness?
- Not Important
- Important
- Extremely Important

28. How satisfied are you with your HOME?
- Very Somewhat
- A Little
- A Little Somewhat
- Very DISSATISFIED
- SATISFIED

NEIGHBORHOOD is the area around your home. Think about how nice it looks, the amount of crime in the area, and how well you like the people.

29. How important is your NEIGHBORHOOD to your happiness?
- Not Important
- Important
- Extremely Important

30. How satisfied are you with your NEIGHBORHOOD?
- Very Somewhat
- A Little
- A Little Somewhat
- Very DISSATISFIED
- SATISFIED

COMMUNITY is the whole city, town, or rural area where you live (it is not just your neighborhood). COMMUNITY includes how nice the area looks, the amount of crime, and how well you like the people. It also includes places to go for fun like parks, concerts, sporting events, and restaurants. You may also consider the cost of things you need to buy, the availability of jobs, the government, schools, taxes, and pollution.

31. How important is your COMMUNITY to your happiness?
- Not Important
- Important
- Extremely Important

32. How satisfied are you with your COMMUNITY?
- Very Somewhat
- A Little
- A Little Somewhat
- Very DISSATISFIED
- SATISFIED

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PLEASE DO NOT WRITE IN THIS AREA
Social Validity Questionnaire

Please take a moment to answer the following:

1. Was WORDPRESS easy to navigate (enter N/A if you did not use WORDPRESS)?

2. Did you find this writing/blogging experience useful? Why or why not?

3. Will you continue to write/blog in this manner in the future?

4. Would you recommend this writing strategy to a friend? If yes, why?

5. What could be done to improve this exercise?

Thank you!
Affinity for the Internet:

7-point Likert scale (1 = strongly disagree and 7 = strongly agree)

1. I could easily do without using the internet for several days.
2. I would feel lost without being able to use the internet.
3. Whenever I am unable to use the internet, I feel lost.
4. Using the internet is one of the more important things I do each day.
APPENDIX G

IRB Approval

University of Colorado
Colorado Springs
Institutional Review Board (IRB) for the Protection of Human Subjects

Date: 8/15/2014

IRB Review

IRB PROTOCOL NO.: 15-003
Protocol Title: Therapeutic benefits of blogging: Using technology to improve mental health
Principal Investigator: Leilani Feliciano, Ph.D.
Faculty Advisor if Applicable:
Application: New Application
Type of Review: Expedited 7
Risk Level: No more than Minimal Risk
Renewal Review Level (If changed from original approval) if Applicable: N/A No Change
This Protocol involves a Vulnerable Population: N/A (No Vulnerable Population)
Expires: 14 August 2015
*Note, if exempt: If there are no major changes in the research, protocol does not require review on a continuing basis by the IRB. In addition, the protocol may match more than one review category not listed.
Externally funded: ☐ No ☑ Yes
OSP #: ☑ Yes
Sponsor:

Thank you for submitting your Request for IRB Review. The protocol identified above has been reviewed according to the policies of this institution and the provisions of applicable federal regulations. The review category is noted above, along with the expiration date, if applicable.

Once human participant research has been approved, it is the Principal Investigator’s (PI) responsibility to report any changes in research activity related to the project:
• The PI must provide the IRB with all protocols and consent form amendments and revisions.
  o The DRS must approve these changes prior to implementation.
• All advertisements recruiting study subjects must also receive prior approval by the IRB.
• The PI must promptly inform the IRB of all unanticipated serious adverse events within 24 hours. All unanticipated adverse events must be reported to the IRB within 1 week (see AU CCP 16 14(h)(b)). Failure to comply with these federally mandated responsibilities may result in suspension or termination of the project.
• Review study with the IRB prior to expiration.
• Notify the IRB when the study is complete

If you have any questions, please contact Research Compliance Specialist in the Office of Sponsored Programs at 719-555-3903 or irb@uccs.edu

Thank you for your concern about human subject protection issues, and good luck with your research.

Sincerely yours,

Michele Okun, PhD
IRB Reviewer

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