Variations in the spacing of expressive writing sessions

Cindy K. Chung* and James W. Pennebaker
The University of Texas at Austin, Austin, Texas, USA

Objectives. In a test to determine whether a brief version of the expressive writing (EW) method was viable, 106 college students participated in an experiment dealing with the study of life transitions.

Design. Individuals were randomly assigned to write for 15 minutes on three occasions: either three times separated by 10-min break (1-hour condition), 35-min break (3-hour condition), or 24-hour break (3-day condition).

Methods. Participants were randomly assigned to write about their thoughts and feelings about the transitions (N = 80), or to describe daily behaviours surrounding the transitions in a non-emotional way (N = 26).

Results. The three emotional writing conditions did not vary in terms of their engagement with writing, their emotional reactions, short- or long-term reactions to the intervention. Compared to controls, those in the experimental conditions evidenced fewer symptom reports 9 months after writing.

Conclusions. The findings suggest that a brief 1-hour EW is more emotionally demanding, but that it has comparable effects on physical symptoms as the traditional 3-day method.

What is the theoretical justification for having people in expressive writing (EW) studies write once a day for 20 minutes for several days? None. The original EW study had people write for 4 consecutive days because the researchers could only reserve laboratory rooms for a single week in the late afternoons. Because of time restrictions for the rooms, the researchers could only allot 15 minutes of writing for each participant on each day. The Pennebaker and Beall (1986) study worked, and ever since then, writing once per day on three of four occasions has became an implicit norm in the EW world (for reviews, see Baikie & Wilhelm, 2005; Frattaroli, 2006; Lepore & Smyth, 2002; Pennebaker & Chung, 2006; Pennebaker & Graybeal, 2001; Sloan & Marx, 2004).

Although the original Smyth (1998) EW meta-analysis reported that a longer span of time between writing sessions was preferable, Frattaroli’s (2006) meta-analysis failed...

*Correspondence should be addressed to Cindy K. Chung, Department of Psychology A8000, University of Texas at Austin, Austin, TX 78712, USA (e-mail: cindyk.chung@mail.utexas.edu).
to find a difference in effect sizes as a function of the spacing of writing sessions. Most of the 146 EW studies in Frattaroli’s meta-analysis were conducted over 3–4 days, 20-minute writing sessions, with just over half of the studies scheduled over consecutive days. Although researchers have had people write once a day for 3–4 days, once or twice a week for several weeks, and a few other variations, no one has experimentally determined whether the writing schedule can be done even more quickly. As a practical matter, it would be beneficial to clients, researchers, and therapists to decrease the total time involved to administer EW.

The present study is the first to test the boundary conditions of the traditional EW paradigm by shortening the overall writing time to as short as 1 hour. Previous EW studies have examined the salutary benefits of writing about specific upheavals and life transitions, such as coming to college (e.g. Pennebaker, Colder, & Sharp, 1990), being laid off from a job (Spera, Buhrfeind, & Pennebaker, 1994), or breaking up with a romantic partner (e.g. Boals & Klein, 2005). The present study examines whether writing about a life transition once per hour for 3 hours or even three times in 1 hour is as effective as the traditional once per day approach.

Methods

Participants

College students were recruited through flyers, an on-line public bulletin board (Craigslist.com), and class announcements to participate in a study on life transitions. People were offered $10/hour for their participation in the on-line pre-writing questionnaires and attendance to the writing sessions. Interested students were directed to a web site that described the study and assessed eligibility (i.e. participants had to report being over 18 years of age, in college, not suicidal, and not suffering from major mental disorders including depression or schizophrenia).

Participants were randomly assigned to either an experimental (N = 80) or a control (N = 26) condition. All participants were then randomly assigned to conditions with different spacing between writing sessions. Each condition wrote three times, 15 minutes each time. The length of the breaks between writing sessions varied across conditions: 10-minute break for the 1-hour condition, 35-minute break for the 3-hour condition, and 24 hours for the 3-day condition. Data from the randomly assigned control participants were aggregated into a single group and compared with experimental participants in the three time periods. Most participants were from middle to upper middle class backgrounds, single, and native English speakers.

The data from four participants (three in the 3-day experimental and one in the 3-day control) who did not complete all writing assignments were excluded. The 1-month follow-up measures were completed by 100 participants. Of those, 93 completed the 9-month follow-up.

Procedure

In addition to a consent form, participants completed on-line pre-testing questionnaires: Centre for Epidemiological Studies Depression (CESD; 10 items; Radliff, 1977); a general health questionnaire that asks about physician visits and frequency of health behaviours; a 15-item version of the Pennebaker Inventory of Limbic
Languidness (PILL, Pennebaker, 1982), which is a measure of general symptom reporting; Impact of Events Scale Revised (IES-R; 14 items; Horowitz, Wilner, & Alvarez, 1979). Prior to the IES-R, individuals were asked to briefly describe the life transition that they would write about in the study. The IES-R items, then, were keyed to the topics that they had identified. Participants were asked to respond to the IES-R on the same topic at follow-up. All pre-testing was completed within 1 week before the actual writing phase of the study.

The actual writing phase of the study was conducted in a standard classroom for groups of 3–25 people (mean = 13.3) where participants in multiple conditions were present. General introductions were made by an experimenter blind to condition. Participants then moved to an adjacent classroom where a second researcher (also blind to condition) told participants to follow the instructions that were printed on the writing booklets which corresponded with their randomly assigned condition.

The writing instructions for the experimental conditions asked participants on all three writing assignments to write about their deepest thoughts and feelings regarding their life transition. Previous EW studies have had control participants focus on actual behaviours of the same or next day without mentioning emotions or attitudes (after Pennebaker et al., 1990). Since the current study had some control participants completing their writing sessions in a single day and some completing within multiple days, the instructions were slightly modified to ensure that all control participants wrote about the same general topic: the writing assignments had participants describe behaviours on a typical day prior to the life transition (first assignment), the behaviours of the current day (second assignment), and the likely behaviours of a day 4 weeks ahead (third assignment). Part of the instructions read ‘For example, you might start by noting that you woke up to an alarm clock at a certain time, got up, walked to the bathroom, turned on the shower tap, . . . etc.’

The researcher and assistants left the room, and returned after 15 minutes. The researcher asked participants to place their writing assignment (with code number) into a large box as they left the writing room, then announced that participants’ ID cards indicated when to return for the next writing session. Participants could visit the experimental lounge, go outside, talk on a cell phone, or do anything as long as they were back in time for their writing.

Following the final writing session, participants completed the post-writing questionnaire in the Questionnaire Room. Participants were told that the researchers wanted to know more about life transitions, and that they would receive a full debriefing at the conclusion of the study. The experimenter made sure that no one was distraught and answered any general questions. Participants were e-mailed 1 and 9 months after the writing sessions, with a link to the primary dependent measures and questions about the writing sessions. On completion at the 9-month follow-up, individuals were given a detailed description and preliminary findings from the study.

Text preparation

Each essay was transcribed into a single text file. The text files were processed using a computerized text analysis programme, Linguistic Inquiry and Word Count (LIWC; Pennebaker, Francis, & Booth, 2001), which categorizes words into standard language variables (e.g. articles, pronouns), and psychological categories (e.g. emotion words, cognitive processes). Results are reported as a percentage of total words.
Results

Manipulation checks

The experimental manipulations were successful. All post-writing questionnaires were rated along 7-point unipolar scales and were subjected to separate analyses of variance (ANOVs). *A priori* contrasts were conducted using the mean-squared error term. The three experimental groups rated their writing topics as more personal and emotional than the control group (see Table 1). The 1-hour and 3-day conditions rated the writing as more meaningful than the 3-hour condition, which did not differ significantly from the control condition.

The LIWC analyses of the texts corroborated self-reports. The three emotional writing conditions used more negative emotion words, positive emotion words, and cognitive words (e.g. realize, cause, understand) than controls. The three emotional writing conditions did not differ in their use of emotion and cognitive words. None of the groups differed in their use of first-person singular pronouns (i.e. *I, me, my*).

Immediate effects of writing

As depicted in the table, the 1-hour group reported that the writing evoked more feelings of sadness or depression. The 3-day participants tended to find the writing assignments less aversive and easier to do. All three experimental groups – in comparison with controls – claimed that the writing procedure helped them to better understand their life transitions. The 3-day condition reported thinking about their topic most between writing sessions. Obviously, their between-writing periods were much longer compared with the 1-hour condition. Depending on the degree to which cognitive processing between writing sessions brings about change, this could be important.

Health changes over time

Although we were unable to obtain objective markers of physical health, participants completed self-reports about their general levels of physical symptom reporting, visits to physicians, and specific health-related behaviours at 1 and 9 months after the writing sessions. All 1- and 9-month health measures were residualized using linear regression analyses controlling for their pre-writing levels, age, and sex. The residualized follow-up measures were then subject to separate repeated measure ANOVAs.

For the PILL, a repeated measure ANOVA by time and condition showed a significant main effect of condition, $F(3, 89) = 3.01$, $p = .03$, $\eta^2_p = .09$, with no significant interaction (see Figure 1). Post-hoc tests for each experimental writing condition against the control condition were significant for the 1-hour ($p = .01$) and 3-day ($p = .03$) groups, and marginally significant for the 3-hour group ($p = .08$). There were no significant differences between any pairs of the experimental writing groups (all $p$s $>.29$).

There were no significant main effects or interactions for the CES-D, $F(3, 89) = 0.09$, $p = .97$, $\eta^2_p = .00$, or IES-R scores, $F(3, 89) = 0.15$, $p = .93$, $\eta^2_p = .00$. The study did not have the effect of increasing rumination or depression in any of the conditions.

Discussion

According to these preliminary results, EW over the course of an hour seems promising. Despite being slightly more difficult and tiring, the 1-hour intensive writing session appeared to confer comparable physical health benefits to the traditional 3-day writing
Table 1. After-writing questionnaires

<table>
<thead>
<tr>
<th>After-writing questionnaires</th>
<th>1-hour (N = 24)</th>
<th>3-hours (N = 28)</th>
<th>3 days (N = 25)</th>
<th>Control (N = 25)</th>
<th>F(3, 98)</th>
<th>p</th>
<th>( \eta^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manipulation checks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How personal were your essays?</td>
<td>6.21(_a)</td>
<td>5.93(_a)</td>
<td>6.08(_a)</td>
<td>3.64(_b)</td>
<td>22.7</td>
<td>&lt;.001</td>
<td>.41</td>
</tr>
<tr>
<td>How much did you reveal your emotions?</td>
<td>5.63(_a)</td>
<td>5.75(_a)</td>
<td>5.44(_a)</td>
<td>2.36(_b)</td>
<td>42.3</td>
<td>&lt;.001</td>
<td>.57</td>
</tr>
<tr>
<td>To what degree has this experiment been valuable or meaningful for you?</td>
<td>5.67(_a)</td>
<td>4.50(_b)</td>
<td>5.32(_a)</td>
<td>4.36(_b)</td>
<td>5.60</td>
<td>.001</td>
<td>.15</td>
</tr>
<tr>
<td>LIWC text analysis results (% of total words)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative emotion words (e.g. angry, cry, sad)</td>
<td>2.45(_a)</td>
<td>2.19(_a)</td>
<td>2.01(_a)</td>
<td>0.66(_b)</td>
<td>35.8</td>
<td>&lt;.001</td>
<td>.52</td>
</tr>
<tr>
<td>Positive emotion words (e.g. adore, joy, laugh)</td>
<td>2.48(_a)</td>
<td>2.67(_a)</td>
<td>2.33(_a)</td>
<td>1.23(_b)</td>
<td>23.2</td>
<td>&lt;.001</td>
<td>.42</td>
</tr>
<tr>
<td>First-person singular pronouns (i.e. I, me, my)</td>
<td>4.68(_a)</td>
<td>4.78(_a)</td>
<td>4.51(_a)</td>
<td>4.18(_b)</td>
<td>1.32</td>
<td>.27</td>
<td>.04</td>
</tr>
<tr>
<td>Cognitive words (e.g. realize, think, understand)</td>
<td>8.18(_a)</td>
<td>8.19(_a)</td>
<td>7.93(_a)</td>
<td>4.26(_b)</td>
<td>37.6</td>
<td>&lt;.001</td>
<td>.54</td>
</tr>
<tr>
<td>General reactions to writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over the three writing sessions, how difficult has it been for you to write during the experiment?</td>
<td>2.54(_a)</td>
<td>1.89(_a,b)</td>
<td>2.12(_a,b)</td>
<td>1.76(_b)</td>
<td>1.73</td>
<td>.17</td>
<td>.05</td>
</tr>
<tr>
<td>How sad or depressed have you felt over the course of the three writing sessions?</td>
<td>3.38(_a)</td>
<td>2.64(_a)</td>
<td>2.40(_a)</td>
<td>1.72(_a)</td>
<td>6.63</td>
<td>&lt;.001</td>
<td>.17</td>
</tr>
<tr>
<td>To what degree are you physically or emotionally tired because of the writing?</td>
<td>3.38(_a)</td>
<td>2.89(_a,b)</td>
<td>2.32(_a)</td>
<td>2.64(_b)</td>
<td>1.57</td>
<td>.20</td>
<td>.05</td>
</tr>
<tr>
<td>Questions about the writing process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To what degree did your writing help you to better understand your thoughts and feelings about your life transition?</td>
<td>4.50(_a)</td>
<td>4.68(_a)</td>
<td>4.88(_a)</td>
<td>3.48(_b)</td>
<td>3.82</td>
<td>.01</td>
<td>.11</td>
</tr>
<tr>
<td>To what degree do you feel that your writing has made you think about your life transition in a different way?</td>
<td>4.67(_a)</td>
<td>4.46(_a)</td>
<td>4.68(_a)</td>
<td>4.00(_b)</td>
<td>.93</td>
<td>.43</td>
<td>.03</td>
</tr>
<tr>
<td>In between the writing sessions, to what degree did you think about your writing topic?</td>
<td>3.29(_a)</td>
<td>3.61(_a)</td>
<td>4.48(_b)</td>
<td>3.36(_a)</td>
<td>2.20</td>
<td>.09</td>
<td>.06</td>
</tr>
<tr>
<td>Each writing session lasted 15 minutes. Was this too short (1), about right (4), or too long (7)?</td>
<td>3.42(_a)</td>
<td>3.32(_a)</td>
<td>3.48(_a)</td>
<td>3.40(_a)</td>
<td>.08</td>
<td>.97</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note. After-writing questionnaires were answered along a 7-point scale ranging from 1 = not at all to 7 = a great deal. All one-way ANOVAs are based on 3, 98 degrees of freedom. Significance levels are based on the overall ANOVA. Means with different subscripts are significantly different (\( p \leq .05 \), two-tailed tests) using contrasts based on the mean squared error term, 96 df.
method. However, EW over the course of three hours is not recommended. While they fared about as well as the traditional 3-day group on the health measures, the 3-hour experimental group rated the writing as slightly less helpful, and the study less valuable at follow-ups. Compliance was lowest for the 3-day experimental and control participants; a few people in this group failed to return to complete the writing sessions.

One concern was that EW over a brief time might drop people’s defences causing them to become overly emotional in the study or lead to heightened rates of long term depression or PTSD symptoms (e.g. McNally, Bryant, & Ehlers, 2003). Fortunately, these concerns were not realized. Large groups of people wrote in classroom settings, continually being exposed to different experimenters who they never met personally. The only important feature was that the first introductory comments were made by a senior faculty member (the second author) to convey authority and seriousness about the project. Given all of these features, it is interesting that there were large effect sizes for ratings of how personal and emotional the experimental writing conditions were, and a medium effect size for improvements in physical health, relative to the control condition.

Future studies should repeat the study with larger samples, and with behavioural as opposed to self-report measures. The success of such studies will be informative as to whether brief EW may be tested for those going through more intense emotional issues. In a real-world setting, the ‘1-hour’ method will probably require at least 90–100 minutes, including a verbal introduction outlining the importance of the method, the three writing sessions of 15 minutes each with a 10-minute break between them, and a brief follow-up discussion.

Acknowledgements

Portions of this project were funded by a contract from the US Army Medical Research Unit-Europe and the Department of Defence. We are indebted to Richard B. Slatcher, Alberto Agosti,
Arden Corter, Kitty Nesbitt, and Megan L. Robbins for their help in conducting the study, and to Jenna Baddeley for comments on an earlier draft of this paper.

References

Received 1 July 2007; revised version received 24 September 2007