

SUPPLEMENTAL MATERIALS

Table S1. Descriptive Statistics for Full Sample and Tests of Difference by Dose

	Full Sample N = 28	Low Dose n = 15	High Dose n = 13	Test of Difference by Dose
Sex	21 female; 7 male	11 female; 4 male	10 female; 3 male	$\chi^2=.05$, $p = .83$
Age	M =45.33; SD = 9.60	M =45.73; SD =8.97	M = 44.83; SD = 10.72	$t=.24$, $p=.81$
Race	25 White; 3 Non-white	13 White; 2 Non- White	12 White; 1 Non-White	$\chi^2=.90$, $p =.64$
Position	6 Firefighter/Paramedic/Police 13 Licensed medical Provider 8 Medical/Emergency Support Staff 1 Did not report	3 7 5 0	3 6 3 1	$\chi^2=4.89$, $p =.43$
Years in Position	M =13.74 years; SD =9.85	M = 13.20; SD = 8.68	M = 14.42; SD = 11.51	$t=-.31$, $p=.76$
Working directly with COVID-19 Patients	15 No; 11 Yes; 2 Did not report	9 No; 6 Yes	6 No; 5 Yes; 2 Did not report	$\chi^2=1.50$, $p =.68$
Prior Psychiatric Disorder	3 No; 25 Yes	2 No; 13 Yes	1 No; 12 Yes	$\chi^2=1.45$, $p =.49$
Prior Psychiatric Treatment	8 No; 20 Yes	4 No; 11 Yes	4 No; 9 Yes	$\chi^2=.06$, $p = .97$
Pre- Intervention Symptoms^a	M = 1.14; SD = .72 Range 0-3, Median = 1.00	M = 1.32; SD = .71	M = 0.99; SD = .71	$t=1.25$, $p =.23$
Pre- Intervention Well-being^b	M = 3.68; SD = 1.08 Range 2-5.33, Median = 3.66	M = 3.93; SD = 1.07	M = 3.38; SD = 1.04	$t=.65$, $p =.18$
Number of Toolkit Sessions	M = 3.14; SD = 2.62	M = 3.93; SD = 1.07	M = 3.39; SD = 1.04	$t=.41$, $p =.69$

Note: M = Mean; SD = Standard Deviation

^a Patient Health Questionnaire-4; Kroenke, Spitzer, Williams & Lowe, 2009 plus one additional item to capture disrupted sleep (“Trouble falling or staying asleep or sleeping too much”; per the DSM-5: APA 2013). Higher scores reflect greater symptoms. The response options were slightly modified to adapt to

the instructions asking about the past week rather than the past 2 weeks: 0 = Not at all; 1 = A few days; 2 = More than half the days; 3 = Nearly every day.

^b To create a brief, yet broad, index of well-being, one item was adapted from the 1) Satisfaction with Life Scale (“I felt satisfied with my life”; Diener, Emmons, Larsen, & Griffin, 1985), 2) Meaning in Life Questionnaire - presence subscale (“I felt my life was meaningful”; Steger, Frazier, Oishi, & Kaler, 2006), and 3) Positive and negative affect schedule - positive affect subscale (“I felt very happy”; Watson, Clark, & Tellegen, 1988), for the purposes of the present study. Response options were created to reflect the frequency of well-being over the past week as research suggests that frequency more important than intensity (Diener, Sandvik, & Pavot, 2009): 1 = Never; 2 = Rarely; 3 = Sometimes; 4 = Often; 5 = Most of the time; 6 = All of the time.

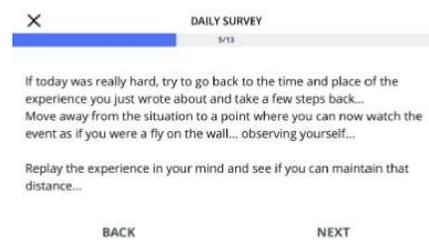
A Daily Coping Toolkit©: For Medical Personnel and Emergency Responders during the COVID-19 Pandemic

Feasibility Study

Procedure: Interested individuals go to www.tinyurl.com/dailycopingtoolkit for information, including the informed consent. Once consent is provided, individuals complete a brief assessment of current symptoms, well-being and psychiatric/treatment history and then receive instructions to download the research application ExpiWell (www.expiwell.com), a secure platform that operates on iOS/Android devices (e.g., smartphone) upon which we administer the Toolkit. Once downloaded, participants are randomized to a high versus low treatment condition and will receive daily prompts to complete the intervention. After 7 days, they complete a brief assessment of symptoms, well-being, and acceptability of the intervention and consent again for continuation in the research.

Daily Coping Toolkit Intervention: Participants are prompted one time daily (with 1-2 reminders) to complete the intervention which consists of the following three parts. *Randomization to high versus low condition is maintained for the first 7 days to test for relative dose effects.*

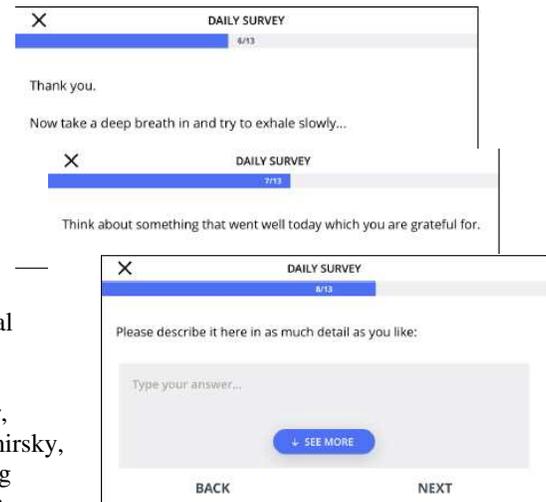
1. **Expressive Writing Activity:** Participants respond to an open-ended prompt to write about their day in an open text box in response to the prompt: “What was today like for you?” For the last several decades there has been compelling evidence of the broad benefits of expressive writing for any stressed population to facilitate this process, particularly in relation to health and occupational functioning (Baikie & Wilhelm, 2005; Frisina, Borod & Lepore, 2004; Harris, 2006; Pennebaker, 2018).
2. **Expressive Writing and Self Distancing Activity:** After this is completed, they are prompted that if the experience was very challenging, to revisit that experience in their mind by taking a “fly on the wall” perspective (Ayduk & Kross, 2010; Kross & Ayduk, 2016; Kross et al, 2012; see figure for instructions). There is significant research demonstrating that shifting perspective about negative emotional experiences can facilitate a healthier distance from it.



3. **Positive Emotion Generation Activity (1 v. 2 prompts)**
Participants are prompted to take a deep breath and then respond to 1 (or 2) of 8 possible prompts in which they can generate positive emotions. In response to each, they are asked to describe their thoughts or memories in open-ended text box. *Note:* For the first 7 days, participants are randomized to either respond to one (low dose) or two (high dose) prompts so as to test the relative efficacy of the “dose”.

After 8 days, all participants default to the higher dose of 2 prompts. Prompts are designed to elicit gratitude, positive social experiences, amusing memories, kind acts they committed, satisfaction/pride with accomplishments, positive future focus, and love for close others. Prior research (Fredrickson & Joiner, 2018; Joiner et al, 2001; Moskowitz et al, 2017; Sin & Lyubomirsky, 2009) has demonstrated that positive emotions generated during highly stressful events predict resilience and improved emotion regulation and coping. Moreover, positive emotion generation has been shown broadly to predict increased psychological wellbeing. Here are the 8 positive emotion prompts which were followed by a screen with a free text box that indicated “Please describe it here in as much detail as you like”:

- Think about a recent moment when you laughed and remember what was so funny.
- Think about something kind you did for another person today.
- Think about a time you were at your best today and used one of your strengths.
- Think about something that you accomplished today which gave you satisfaction.
- Think about a recent experience so good that you had to tell someone about it.
- Think about something that went well today which you are grateful for.
- Think about someone you love and one specific thing you love about them.
- Think about something kind you did for another person today.



References:

- American Psychiatric Association. (2013). In *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596.dsm05>
- Ayduk, Ö., & Kross, E. (2010). From a distance: implications of spontaneous self-distancing for adaptive self-reflection. *Journal of Personality and Social Psychology, 98*(5), 809-829. doi: 10.1037/a0019205
- Baikie, L.A. & Wilhelm, K. (2005). Emotional and physical health benefits of expressive writing. *Advances in Psychiatric Treatment, 11*, 339-346.
- Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75.
- Diener, E., Sandvik, E., & Pavot, W. (2009). Happiness is the frequency, not the intensity, of positive versus negative affect. In *Assessing well-being* (pp. 213-231). Springer, Dordrecht.
- Fredrickson, B.L. & Joiner, T. (2018). Reflections on positive emotions and upward spirals. *Perspectives on Psychological Science, 13*, 194-199.
- Frisina, P.G., Borod, J.C., & Lepore, S.J. (2004). A meta-analysis of the effects of written emotional disclosure on the health outcomes of clinical populations. *The Journal of Nervous and Mental Disease, 192*, 629-634.
- Harris, A.H.S. (2006). Does expressive writing reduce health care utilization? A meta-analysis of randomized trials. *Journal of Consulting and Clinical Psychology, 74*, 243-252.

- Joiner, T., Pettit, J.W., Perez, M., Burns, A.B., Gencoz, T., et al (2001). Can positive emotion influence problem-solving attitudes among suicidal adults? *Professional Psychology: Research and Practice*, 32, 507-512.
- Kroenke, K., Spitzer, R.L., Williams, J.B.W. & Lowe, B. (2009). An ultra-brief screening scale for anxiety and depression: the PHQ-4. *Psychosomatics*, 50, 613-21.
- Kross, E., Gard, D., Deldin, P., Clifton, J., & Ayduk, O. (2012). "Asking why" from a distance: Its cognitive and emotional consequences for people with major depressive disorder. *Journal of Abnormal Psychology*, 121(3), 559-569. doi: 10.1037/a0028808
- Kross, E. & Ayduk, O. (2016). Self-distancing: Theory, Research and Current Directions. *Advances in Experimental Social Psychology*, 55, 81-136.
- Kulas, J. T., Stachowski, A. A., & Haynes, B. A. (2008). Middle response functioning in Likert-response to personality items. *Journal of Business Psychology*, 22, 251-259
- Moskowitz, J.T., Carrico, A.M., et al (2017). Randomized controlled trial of a positive affect intervention for people newly diagnosed with HIV, *Journal of Consulting and Clinical Psychology*, 85, 409-423.
- Pennebaker, J.W. (2018). Expressive writing in psychological science. *Perspectives in Psychological Science*, 13, 226-229.
- Sin, N.L. & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology: In session*, 65, 467-487.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, 53(1), 80-93.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070.