



BRIEF NARRATIVE WRITING PROGRAM IMPLEMENTED IN A NEUROSURGICAL INTENSIVE CARE UNIT DURING THE COVID-19 PANDEMIC

By Ryan Holliday, PhD, David J. Ricke, MS, RN, ACCNS-AG, Claudia Ricklefs, BS, and Meredith Mealer, PhD, RN

Background The COVID-19 pandemic has substantially affected health care professionals. Health care professionals have noted increased distress, psychiatric symptoms, and feelings of burnout during this time. Implementation of brief, easy-to-access psychosocial interventions might help health care professionals process stressful events, thus bolstering mental health. One such approach is the narrative expressive writing program, a 5-session cognitive behavioral writing intervention.

Objectives The narrative expressive writing program was instituted in a neurosurgical intensive care unit during the COVID-19 pandemic. The program was delivered online and guided by a licensed mental health professional.

Methods Health care professionals completed measures of anxiety, depression, burnout, resilience, and perceived stress before and after completing the narrative expressive writing program. Fifty-eight health care professionals initiated the program; 31 (53% of initiators) completed it.

Results Health care professionals who completed the narrative expressive writing program experienced significant reductions in depressive symptoms and perceived stress ($P < .05$).

Conclusions Preliminary data show that narrative expressive writing is an easy-to-access intervention that has the potential to decrease stress and depressive symptoms. Additional research on tailoring or augmenting the narrative expressive writing program may facilitate health care professionals' engagement and address other mental health domains (eg, burnout). (*American Journal of Critical Care*. Published online January 13, 2023.)

The COVID-19 pandemic has had wide-ranging effects on health care professionals (HCPs), with HCPs reporting elevated stress, mental health symptoms, and perceived burnout.^{1,2} Implementation of programming that can reduce stress and bolster mental health is paramount for HCPs working during the COVID-19 pandemic.³ Existing evidence-based interventions (eg, cognitive behavioral therapy) help HCPs process stressful events and attenuate psychiatric symptoms such as depression and anxiety, but these interventions are long-term (≥ 12 sessions) and often occur in real time, such as in person or via telehealth. Given the stress of the COVID-19 pandemic coupled with heavy workloads, brief and easy-to-access interventions are needed for HCPs.

Narrative expressive writing (NEW) is one such intervention. This intervention is specifically designed to include cognitive behavioral elements found to be beneficial in processing stressful and traumatic events (eg, expression of emotions and identification of distorted cognition or unhealthy behavior patterns). Multiple studies have demonstrated that expressive writing interventions have the potential to reduce

psychiatric symptoms.⁴⁻⁶ Unlike other evidence-based interventions, writing interventions such as NEW are designed to be brief (5 sessions) and can be delivered through novel formats such as Research Electronic Data Capture (REDCap) and other virtual platforms.

A prior multimodal HCP program that included NEW was found to be acceptable and feasible and to address psychiatric symptoms.⁷ Nonetheless, NEW

has not been evaluated alone or during the COVID-19 pandemic. In this article, we briefly describe evaluation of an online NEW program within a neurosurgical intensive care unit (ICU) during the COVID-19

pandemic. We evaluated stress, resiliency, burnout, and psychiatric symptoms among HCPs before and after they took part in the NEW program. We also review lessons learned from implementation.

Methods

Participants and Procedure

The NEW program was implemented within a neurosurgical ICU at a large academic hospital in the Rocky Mountain region. Implementation of this program was part of efforts to enhance mental health and resilience during the COVID-19 pandemic. The NEW program was chosen rather than other mental health practices (eg, in-person or telehealth cognitive behavioral therapy) because of the ease of access and briefer time commitment. These features facilitated engagement by a diverse array of neurosurgical ICU HCPs who had various job duties and schedules (eg, night shifts). Moreover, this program was implemented during the COVID-19 pandemic, and the neurosurgical ICU was designated as a COVID-19 ICU multiple times.

Neurosurgical ICU HCPs (registered nurse, certified nursing assistant, unit support staff member, and intensivist) participated in a voluntary program as part of job-related health and wellness initiatives from July 2020 through June 2021. Health care professionals were notified of the program during monthly team meetings and through email. Staff members were compensated 1 hour of base pay for participating in the NEW program. Health care professionals could also participate during work shifts to facilitate engagement. The program was exempt from institutional review board review because it was program evaluation.

Before implementation of NEW, all neurosurgical ICU HCPs ($N = 80$) participated in the preimplementation survey anonymously. The survey was administered online via a secure website (REDCap). This survey gathered job-related information. Health care professionals also completed a series of baseline self-reported measures: anxiety and depressive symptoms

Given the stress of the COVID-19 pandemic coupled with heavy workloads, brief and easy-to-access interventions are needed for health care professionals.

About the Authors

Ryan Holliday is a clinical research psychologist at the Rocky Mountain Mental Illness Research, Education, and Clinical Center for Suicide Prevention, Aurora, Colorado, and an assistant professor at University of Colorado Anschutz Medical Campus, Aurora, Colorado. **David J. Ricke** is a nurse manager at University of Colorado Hospital, Aurora, Colorado. **Claudia Ricklefs** is program administrative support at University of Colorado Hospital. **Meredith Mealer** is a psychiatric mental health nurse practitioner at the Rocky Mountain Mental Illness Research, Education, and Clinical Center for Suicide Prevention and an associate professor at University of Colorado Anschutz Medical Campus.

Corresponding author: Meredith Mealer, PhD, RN, 1700 N Wheeling St, Aurora, CO 80045 (email: meredith.mealer@cuanschutz.edu).

(the Hospital Anxiety and Depression Scale),⁸ burnout (exhaustion, depersonalization, and personal accomplishment, assessed by the Maslach Burnout Inventory),^{9,10} resilience (the Connor-Davidson Resilience Scale),¹¹ and perceived stress (a visual analog scale).¹² All measures have strong demonstrated psychometric properties including reliability and validity.⁸⁻¹² After NEW completion, approximately 5 weeks after the preintervention survey, we reassessed psychiatric symptoms, burnout, resilience, and perceived stress using the same measures and the same secure website.

NEW Program

Health care professionals initially participated in an individual telehealth preintervention session with an independent licensed mental health professional. This 50-minute session focused on education regarding the structure of NEW and a discussion of the relationship of thoughts, emotions, physical responses, and behaviors (ie, cognitive behavioral framework). In addition, the NEW team member (a licensed psychologist independent of the unit) identified challenges to participating in NEW (eg, behavioral avoidance). The HCPs then worked collaboratively with the mental health professional to solve these challenges.

Following the preintervention session, HCPs were invited to initiate the NEW program. During the first NEW session, HCPs were prompted to identify a stressful and/or traumatic event. Health care professionals were encouraged to focus on a stressor or trauma related to the COVID-19 pandemic; however, if they could not identify one, they were permitted to focus on any lifetime stressor or trauma. After identifying this event, HCPs were instructed to write about the event, including descriptions of thoughts, emotions, physical sensations (eg, heart racing), and behavioral responses. Writing was designed to be narrative in nature^{13,14} while also facilitating exposure to the event.⁷ Health care professionals were given a week to write and encouraged to do the writing, if possible, all in 1 sitting. All writing was conducted and submitted online through the secure website.

Following the initial writing session, a licensed mental health professional trained in cognitive behavioral therapy reviewed the responses and provided validating, empathetic feedback in written form. In addition, the licensed mental health professional reinforced healthy coping and used cognitive reframing approaches to explore distorted cognitions (eg, identifying evidence for and against a belief). This written feedback was delivered through the secure

Table 1
Characteristics of participants from the neurosurgical intensive care unit (N=80)

Variable ^a	Mean	SD	
Years in profession	6.03	5.27	
Years working in the unit	3.93	3.14	
Variable	No.	%	
Type of health care professional			
Registered nurse	70	88	
Certified nursing assistant	5	6	
Unit support staff member	4	5	
Intensivist	1	1	
Variable	No.	% of total (N=80)	% of NEW initiators (n=58)
NEW sessions completed			
0	22	28	—
1	58	72	100
2	44	55	76
3	34	42	59
4	33	41	57
5	31	39	53

Abbreviation: NEW, narrative expressive writing intervention.

^a Data missing as follows: years in profession (n=7) and years working in the neurosurgical intensive care unit (n=6).

website and provided to each HCP. Health care professionals were advised to review the response from the licensed mental health professional before conducting their subsequent narrative writing assignment, which was also focused on the stressful and/or traumatic event identified in the first NEW session. This process of writing and receiving written feedback was repeated for a total of 5 sessions. All writing occurring through the secure website, and each session took place during approximately 1 week.

After completing the 5 NEW sessions, HCPs participated in a telehealth postintervention session. During this session, HCPs met with the same licensed psychologist from the preintervention session and reviewed program gains (eg, decreased stress, use of healthy coping). Methods of maintaining gains (eg, continuing to write autonomously and assessing evidence for and against cognitions) also were discussed.

Analysis

We evaluated rates of program completion. Among NEW completers, we examined within-group differences before and after NEW. Differences in anxiety and depression symptoms, burnout, resilience, and perceived stress were examined using within-group (paired-samples) 2-tailed *t* tests.

Results

Job-related and NEW-related information for HCPs in the neurosurgical ICU can be found in Table 1.

Table 2**Scores on self-reported measures of psychiatric symptoms, burnout, resilience, and perceived stress before and after completion of all 5 NEW sessions**

Domain ^a	Before NEW			After NEW			<i>d</i>
	Mean	SD	% Positive screen	Mean	SD	% Positive screen	
Anxiety	7.39	3.51	51	7.32	3.57	49	.02
Depression	3.93	3.35	15	3.03	2.88	11	.29
Exhaustion	25.69	10.64	79	24.46	11.32	65	.11
Depersonalization	9.99	6.52	61	9.97	6.74	52	<.01
Personal accomplishment	34.76	5.88	80	33.66	7.72	81	.16
Resilience	73.03	8.91	46	74.03	13.21	65	.09
Perceived stress	50.88	23.35	NA	31.70	20.03	NA	.88

Abbreviation: NA, not applicable; NEW, narrative expressive writing intervention.

^a Domains with significant differences ($P < .05$) before and after NEW are set in bold.

Of the 80 HCPs offered NEW participation, the overwhelming majority (72%) attended at least 1 NEW session (ie, attended more than the telehealth preintervention session). Of these program initiators, more than half (53%) completed all 5 NEW sessions. Program completers had significantly lower perceived stress and symptoms of depression after completing all 5 sessions ($P < .05$; Table 2). Symptoms of anxiety, exhaustion, depersonalization, personal accomplishment, and resilience did not significantly change after program completion ($P > .05$).

Discussion

We evaluated a brief online narrative writing program to bolster mental health among HCPs working during the COVID-19 pandemic. Building on prior work examining the feasibility and acceptability of similar programming,⁷ we found that most HCPs in the neurosurgical ICU who initiated NEW completed the program. In addition, those who completed the program experienced significantly decreased stress and symptoms of depression.

Such findings show that online narrative writing programs such as NEW may be easy to implement, brief, and beneficial for the mental health of HCPs. The NEW program could occur virtually and was

less time-intensive than other forms of evidence-based treatment such as cognitive behavioral therapy.

Our findings are not necessarily surprising. Prior research has demonstrated that expressive writing

interventions can reduce stress and psychiatric symptoms.¹²⁻¹⁴ Nonetheless, no study to date has examined how to tailor an expressive writing program to an online format and adapt it for HCPs during the COVID-19 pandemic.

A sizable proportion of HCPs did not initiate NEW (28%) or complete the program (61% of the total sample, 47% of NEW initiators). For program completers, several domains, including burnout, did not significantly improve. Research may be necessary to determine methods of enhancing NEW initiation and engagement as well as methods to increase its effect on mental health factors that did not improve.

Limitations

We evaluated only outcomes following program completion (all 5 sessions). The long-term benefit of NEW is unclear. Our findings may also be affected by selection bias, with those most interested in expressive writing interventions participating and thus most likely to benefit. Nonetheless, because we did not conduct a randomized clinical trial, effectiveness could not be determined.

We did not assess several factors (eg, sociodemographics such as age, sex, and race/ethnicity and concurrent use of psychotherapy or pharmacotherapy). Additionally, the anonymous survey precluded differentiating the entire unit staff from NEW participants.

This program also occurred within a large academic hospital. Although this program was implemented as part of COVID-19 employee wellness initiatives, funding was available to compensate the licensed mental health professionals. Similar programs may need to be modified according to the setting, especially if access

Study results show that online narrative writing programs such as NEW may be easy to implement, brief, and beneficial for the mental health of health care professionals.

to certain factors (eg, mental health staff members) is not available.

The neurosurgical ICU was converted to focus on COVID-19, rather than neurologic sequelae, multiple times. How these shifts may have impacted mental health and NEW participation and benefit is unclear.

Lessons Learned

A sizable proportion of HCPs did not initiate or engage with NEW. Although this evaluation did not specifically probe why HCPs never initiated or completed NEW, it is plausible that some HCPs elected to participate in mental health care outside work, left the neurosurgical ICU, or declined to participate altogether. Potential methods of enhancing mental health programming for HCPs during and following the COVID-19 pandemic can include NEW or effective complementary approaches. For instance, psychotherapy, exercise, yoga, or mindfulness-based interventions may be more acceptable to those not interested in narrative writing.

Some NEW completers did not experience improvement in a number of domains. Although the reasons are unclear, we propose possible explanations. First, HCPs might not have written about a stressful or traumatic event but instead might have elected to write about nondistressing content or engage in free association. In these cases, HCPs may not have fully engaged with processing their emotions, reframing their thoughts, or recognizing unhealthy behavior patterns, central tenets of the cognitive behavioral expressive writing intervention.⁷ Alternatively, NEW may not address anxiety, resilience, or burnout. More research is needed to fully elucidate the efficacy of NEW among HCPs. Those developing mental health programs for HCPs may want to also consider interventions with established efficacy in addressing these domains (eg, cognitive behavioral therapy for anxiety disorders).

FINANCIAL DISCLOSURES

This program evaluation was generously supported by Christopher Foreman and family and the University of Colorado Anschutz Medical Campus.

SEE ALSO

For more about psychological responses to the COVID-19 pandemic, visit the AACN *Advances in Critical Care* website, www.aacnconline.org, and read the article by Gee et al, "Beyond Burnout and Resilience: The Disillusionment Phase of COVID-19" (Summer 2022).

REFERENCES

1. Borges LM, Holliday R, Barnes SM, et al. A longitudinal analysis of the role of potentially morally injurious events on COVID-19-related psychosocial functioning among healthcare providers. *PLoS One*. 2021;16(11):e0260033. doi:10.1371/journal.pone.0260033
2. Chirico F, Nucera G, Magnavita N. Protecting the mental health of healthcare workers during the COVID-19 emergency. *BJPsych Int*. 2020:1-2.
3. Sharifi M, Asadi-Pooya AA, Mousavi-Roknabadi RS. Burnout among healthcare providers of COVID-19: a systematic review of epidemiology and recommendations. *Arch Acad Emerg Med*. 2020;9(1):e7. doi:10.22037/aaem.v9i1.1004
4. La Marca L, Maniscalco E, Fabbiano F, Verderame F, Schimmenti A. Efficacy of Pennebaker's expressive writing intervention in reducing psychiatric symptoms among patients with first-time cancer diagnosis: a randomized clinical trial. *Support Care Cancer*. 2019;27(5):1801-1809.
5. Meston CM, Lorenz TA, Stephenson KR. Effects of expressive writing on sexual dysfunction, depression, and PTSD in women with a history of childhood sexual abuse: results from a randomized clinical trial. *J Sex Med*. 2013;10(9):2177-2189.
6. Sloan DM, Marx BP, Lee DJ, Resick PA. A brief exposure-based treatment vs cognitive processing therapy for post-traumatic stress disorder: a randomized noninferiority clinical trial. *JAMA Psychiatry*. 2018;75(3):233-239.
7. Mealer M, Conrad D, Evans J, et al. Feasibility and acceptability of a resilience training program for intensive care unit nurses. *Am J Crit Care*. 2014;23(6):e97-e105. doi:10.4037/ajcc2014747
8. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand*. 1983;67(6):361-370.
9. Maslach C, Leiter MP, Jackson SE. *Maslach Burnout Inventory Manual*. 4th ed. Mind Garden, Inc; 2017.
10. Maslach C, Jackson SE. The measurement of experienced burnout. *J Occup Behav*. 1981;2:99-113.
11. Connor KM, Davidson JR. Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depress Anxiety*. 2003;18(2):76-82.
12. Lesage FX, Berjot S, Deschamps F. Clinical stress assessment using a visual analogue scale. *Occup Med (Lond)*. 2012;62(8):600-605.
13. Pennebaker JW, Beall SK. Confronting a traumatic event: toward an understanding of inhibition and disease. *J Abnorm Psychol*. 1986;95(3):274-281.
14. Pennebaker JW, Evans JF. *Expressive Writing: Words That Heal*. Idyll Arbor; 2014.

To purchase electronic or print reprints, contact American Association of Critical-Care Nurses, 27071 Aliso Creek Road, Aliso Viejo, CA 92656. Phone, (800) 899-1712 or (949) 362-2050 (ext 532); fax, (949) 362-2049; email, reprints@aacn.org.