

Piloting Group-Based Behavioral Activation Therapy for Families of Deceased COVID-19 Patients

BACKGROUND: Surrogate decision-making is a stressful process for many family members of critically ill patients. The COVID-19 pandemic may have amplified the risk for anxiety, depression, and posttraumatic stress disorder (PTSD) symptoms in ICU surrogates.

OBJECTIVES: This study piloted an online group-based behavioral intervention with family members of deceased COVID-19 patients. Participant engagement, perceptions, and responses related to the intervention were assessed.

DESIGN: A single-arm pilot study was conducted with bereaved families. Quantitative analysis of measures of anxiety, depression, and PTSD symptoms was conducted with mixed models. Qualitative data were analyzed to identify themes in surrogates' experiences with the intervention.

SETTING: Participants were recruited from ICUs at a tertiary academic medical center. Participants completed the intervention, measures, and interviews online.

SUBJECTS: Participants were family members of patients who died from COVID-19.

INTERVENTIONS: The intervention involved six online group-based behavioral activation sessions. Sessions covered topics pertinent to grieving and engagement in personally meaningful activities.

MEASUREMENTS AND MAIN RESULTS: Semi-structured interviews explored participants' experiences with the intervention. Surrogates also completed measures of anxiety, depression, and PTSD symptoms before and after the intervention. Nineteen of 26 participants (73.1%) completed the study. Thematic analysis suggested that surrogates found the group helpful for overcoming perceived isolation, receiving validation, and developing coping skills. Significant pre-to-post reductions were observed in symptoms of Hospital and Anxiety Disorder Scale (HADS) anxiety (pre-mean = 9.27, SD = 5.30 vs post-mean = 6.80, SD = 4.16; $p = 0.0271$), HADS depression (pre-mean = 6.65, SD = 4.58 vs post-mean = 4.89, SD = 3.40; $p = 0.0436$), and Impact of Events Scale-Revised PTSD (pre-mean = 36.86, SD = 16.97 vs post-mean = 24.14, SD = 13.49; $p = 0.0008$).

LIMITATIONS: This was a preliminary study based on qualitative and self-report measures. Future studies should include a control group.

CONCLUSIONS: Online group-based behavioral activation therapy appears to be a potentially useful intervention for family members of ICU patients who died from COVID-19.

KEY WORDS: anxiety; behavioral activation; COVID-19; critical care; depression; posttraumatic stress disorder

Ashley Eaton England, MA¹

Stephanie Lietzau, BS¹

James Vu, BS²

Charles Hebert, MD³

David Banayan, MD³

Jared A. Greenberg, MD⁴

James Gerhart, PhD^{1,3}

Copyright © 2022 The Authors. Published by Wolters Kluwer Health, Inc. on behalf of the Society of Critical Care Medicine. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

DOI: 10.1097/CCE.0000000000000803

Family members and loved ones often serve as surrogate decision-makers for seriously ill patients in the ICU, including patients with acute respiratory failure from COVID-19 pneumonia (1). For these surrogates, decision-making tends to be cognitively, emotionally, and physically taxing (2). The COVID-19 pandemic has introduced additional stressors for surrogates who



KEY FINDINGS

Question: Do families of deceased COVID-19 patients find online group-based behavioral activation helpful in managing distress?

Findings: Surrogates in this single-arm trial reported that the program helped them overcome isolation and engage in meaningful activities. Significant pre-to-post reductions in anxiety, depression, and posttraumatic stress disorder were reported.

Meaning: Online behavioral activation groups may be useful for addressing psychologic distress in bereaved families of ICU patients. This type of intervention warrants further study in larger trials.

may have experienced unemployment and increased childcare demands and/or who may have been ill with COVID-19 themselves. Additionally, the novelty of the worldwide pandemic, in addition to social distancing (3), high rates of family transmission, and the social nesting of COVID-19 in already vulnerable communities (4), limited the opportunity for family surrogates to access the resources needed to recover following a patient's death (e.g., meaningful routines, social support, and mental health treatment). Surrogates during the COVID-19 pandemic may therefore be at increased risk for psychologic distress including anxiety, depression, and posttraumatic stress disorder (PTSD) due to the addition of stressors imposed by the pandemic (5–7).

This study describes the development and implementation of a group-based behavioral activation program to address symptoms of anxiety, depression, and PTSD in family surrogate decision-makers of deceased COVID-19 patients. The intervention was intended to help surrogates adapt to their unique struggles and grief related to the COVID-19 pandemic. Like other survivors of large-scale traumatic events, surrogates of deceased COVID-19 patients may need support in establishing a sense of safety, realistic hope, social connectedness, and self-efficacy (8). Behavioral activation was chosen because it is a skills-based approach for increasing engagement in and attention to meaningful and pleasurable activities to reduce psychologic

distress (9–11). Teaching and reinforcing the skills needed to adopt new roles, and routines, and pursue sources can be useful for supporting adaptive behavior and appropriate mood (9, 11). It was expected that behavioral activation's emphasis on adopting healthier routines and overcoming avoidant coping would be well suited to the needs of families following the death of a patient from COVID-19.

The behavioral activation content was piloted online and in a group format to reduce feelings of isolation that may occur following the death of a loved one to a novel illness (12). The program began during an active phase of the pandemic before the widespread dissemination of COVID-19 vaccines. Therefore, following the guidance of the National Center for Complementary and Integrative Health (13), we aimed to: 1) ascertain whether participants would engage with the program, 2) gather participant feedback about the intervention, and 3) determine if the program could produce potentially clinically meaningful signals of change in Anxiety, Depression, and PTSD symptoms.

METHODS

Participants

This study, "Relieving the Burden of Psychologic Symptoms Among Families of Critically Ill Patients with COVID-19," was approved by the Rush University Medical Center Institutional Review Board (IRB) (No. 20071101-IRB01) on July 21, 2020, and the Central Michigan University IRB (No. 2020-1416-FLD) on December 15, 2020. Participants provided consent to participate in the study. Research activities were conducted following the Helsinki Declaration of 1975. Participants were families of patients with COVID-19 who were previously hospitalized in the ICU at Rush University Medical Center in Chicago, IL, during the early phase of the pandemic (March 2020–January 2021). We first approached families to participate in another communication study during the ICU stay; as part of this study, participants were randomized to receive usual care either with or without daily written updates of the patient's condition (NCT03969810) (14). Inclusion criteria for that original study were that upon participant enrollment in the study, patients had required mechanical ventilation for at least 3 consecutive days and/or were predicted to have at least a 25% risk of hospital mortality according to the patient's physician.

Participants were included if they were fluent in the English language and self-identified as one of the patient's medical decision-makers. Families of COVID-19 patients were not permitted to visit during the study period. Exceptions were made when patient death was imminent or during planned withdrawal of life support.

Given the impact of COVID-19 on the experience of families of ICU patients and society in general, we approached all families of COVID-19 patients who were enrolled in the initial ICU study to participate in this follow-up study 3 to 6 months after hospital discharge (NCT04501445) (14). This follow-up study was not planned at the time the initial ICU study was conceived. Both the initial and post-ICU studies were approved by the Rush University Medical Center IRB. Preliminary analysis of psychometric measures completed by families after the ICU stay revealed higher levels of emotional distress among families of deceased patients versus surviving patients (7). Inclusion criteria for this study were prior participation and completion of surveys/interviews in "ICU Rounding Summaries for Families of Critically Ill Patients" (NCT03969810), the patient had been treated in the ICU for COVID-19 and was deceased, and English language fluency.

Intervention

Behavioral activation is a skill-based approach to addressing psychologic concerns and aims to increase goal-directed activities that provide meaning and pleasure (9–11). The grieving experienced after the loss of a loved one can engender depressive disengagement and avoidance, contribute to PTSD (15), and perpetuate grief (16). Additionally, isolation after loss may worsen these psychiatric symptoms (17). Bereaved individuals who participated in a behavioral activation intervention experienced significant improvements in prolonged grief, PTSD, and depression compared with controls (11). For the current study, sessions were tailored to target symptoms of anxiety, depression, and PTSD that may occur with grief and isolation (15–17). Topics and targets for skill acquisition included 1) making a change, 2) values clarification, 3) scheduling activities, 4) overcoming avoidance, 5) working with thoughts, and 6) review and recap. These topics were similar in content to those covered by Papa et al (11), and each was streamlined for a single session. Given the novelty of the pandemic, we aimed to introduce these topics and skills, and assess whether participants

found them to be face valid and useful. Our intervention was half the length of Papa et al (11) (i.e., 6 to 7 vs 12 to 14 sessions).

All sessions were facilitated in Zoom group sessions by a clinical psychologist (J.G.). Group rules were discussed at the start of the intervention including the requirement that participants not share personal information about others. Participants who preferred a higher level of privacy were allowed to call in on a telephone anonymously. All 19 participants expressed comfort in using Zoom and sharing video and their names. Participants were sent workbooks with exercises that emphasized a behavioral activation skill. Participants were encouraged to complete workbooks and share their reflections with the group. Examples of skills taught in session and targeted with workbook activities include self-monitoring (e.g., tracking mood and activities), pleasant event scheduling based on personal values, and mindfulness skills to disengage from cognitive rumination (slides and workbooks are available upon request). Our mixed methods design did not include a randomized control given that we aimed to explore participation, experiences with the intervention, and potentially clinically meaningful signal of change in psychologic distress.

Measures

The Hospital and Anxiety Disorder Scale. Hospital and Anxiety Disorder Scale (HADS) is a 14-item measure of anxiety and depression symptoms (18). Participants rated the frequency or intensity of symptoms on a 4-point scale ranging from 0 (e.g., not at all) to 3 (e.g., most of the time). Example items included, "Worrying thoughts go through my mind" and "I still enjoy the things I used to enjoy." Seven items each measured anxiety and depression. The scale scores were internally consistent in the current sample ($\alpha = 0.93$).

The Impact of Events Scale-Revised. Impact of Events Scale-Revised (IES-R) is a 22-item measure of reexperiencing, avoidance, and hyperarousal symptoms that are commonly observed in PTSD (19). Participants rated the intensity of symptoms related to a stressful event on a 5-point scale ranging from 0 (not at all) to 4 (extremely). Example items included, "I found myself acting or feeling like I was back at that time" and "I was jumpy and easily startled." The scale scores were internally consistent in the current sample ($\alpha = 0.94$).

Procedures

The course of the intervention consisted of six 60-minute group sessions over 8 weeks, each of which was delivered virtually via Zoom sessions. Multiple time slots were offered for each session to provide greater scheduling flexibility. Additionally, an optional seventh make-up session was offered to participants. Implementation of the intervention occurred twice, with one group participating from February 2021 to April 2021 and the second from May 2021 to July 2021.

Before and after the group intervention, participants completed self-report measures of depression, anxiety, and posttraumatic stress symptoms online via Research Electronic Data Capture. After the group intervention, qualitative interviews were conducted with individual participants over Zoom. Before conducting interviews, we developed an interview guide. Content areas included participant responses to the group, aspects that were helpful and difficult for the person, and suggestions for improvement (e.g., changing session structure, changing the number of sessions). Interviews were semi-structured, meaning that participants determined the flow of discussion. Interviews were conducted by one or two of three investigators (A.E.E., S.L., J.V.) who had limited previous interaction with participants. Interviews lasted 30–60 minutes. They were audio-recorded and transcribed verbatim.

Data Analysis

To derive an understanding of surrogates' subjective experiences during participation in the program, transcripts of individual interviews were examined using thematic content analysis. First, four members of the study team (A.E.E., S.L., J.V., J.A.G.) each independently coded two or more transcripts. A codebook was developed based on this preliminary review with 10 of the transcripts. Three members of the study team (A.E.E., S.L., J.V.) then each tested the codebook on two or more additional transcripts, after which the codebook was finalized. Finally, the team used the finalized codebook to apply the codes to all 19 transcripts. Qualitative data analyses were conducted by hand. Participants were only included in analyses and considered to have “completed” the program if they had attended at least three sessions.

Quantitative data were analyzed in R (R Foundation for Statistical Computing, Vienna, Austria) (20).

Hierarchical linear models were estimated using the “lme4” package (21). The “effectsize” package was used to obtain pseudo-standardized regression coefficients (22). Based on conventions suggested by Cohen, standardized regression weight effect sizes were interpreted as small ($\beta = 0.10$), medium ($\beta = 0.30$), and large ($\beta = 0.50$) (23). *p* values were obtained with the “afex” package (24). Mixed modeling was used to derive estimates of pre-to-post change in outcome variables. Missing data were managed with full maximum likelihood estimation so that attrition biases could be minimized through inclusion data obtained from noncompleters. A random intercept was estimated for each surrogate.

RESULTS

We approached 43 families of deceased patients with COVID-19 for participation in the group intervention. Of the 26 families who expressed interest and completed the preintervention survey, 19 participated in at least three sessions (Fig. 1). Characteristics of the 19

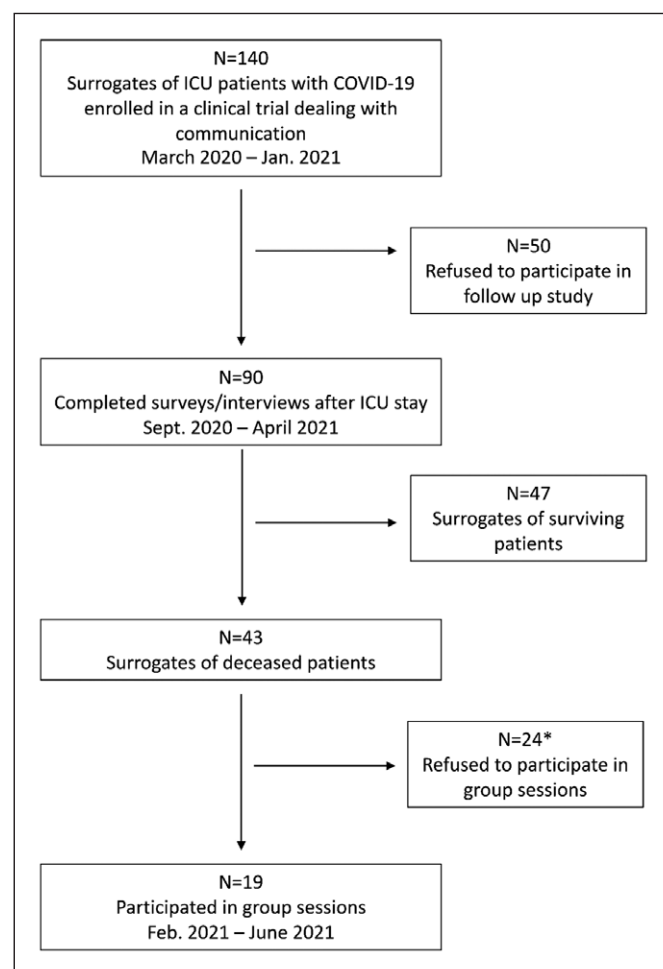


Figure 1. Study Consolidated Standards of Reporting Trials diagram.

participants who completed the program are displayed in **Table 1**. Participants were predominantly female (79%), children of patients with COVID-19 (58%), of Hispanic ethnicity (58%), and college graduates (89%). The average amount of time from hospital discharge to group participation was 7 months (SD, 2 mo; range,

4–12 mo). Rates of session participation were: session 1 = 18; session 2 = 15; session 3 = 15; session 4 = 16; session 5 = 18; session 6 = 14. There were four to six meeting times for each session based on participating availability; the average number of participants at each session was 3 (SD, 1; range, 1–5). Characteristics of

TABLE 1.
Participant Characteristics

Participant Characteristic	Completed Intervention, <i>n</i> = 19	Did Not Complete Intervention, <i>n</i> = 7	Refused Participation, <i>n</i> = 17	<i>p</i>
Relation to patient, <i>n</i> (%)				
Child	11 (58)	5 (72)	8 (47)	0.09
Spouse/partner	7 (37)	0 (0)	2 (12)	
Sibling	1 (5)	1 (14)	2 (12)	
Parent	0	0 (0)	1 (6)	
Other	0	1 (14)	4 (23)	
Age (yr), mean (SD)	49 (11)	40 (4)	37 (7)	< 0.01
Gender, <i>n</i> (%)				
Female	15 (79)	7 (100)	14 (82)	0.57
Male	4 (21)	0 (0)	3 (18)	
Race/ethnicity, <i>n</i> (%)				
Hispanic	11 (58)	7 (100)	8 (47)	0.25
White (not Hispanic)	5 (26)	0 (0)	2 (12)	
Black (not Hispanic)	2 (11)	0 (0)	4 (23)	
Other	1 (5)	0 (0)	3 (18)	
Religion <i>n</i> (%)				
Christian	15 (79)	6 (86)	12 (71)	0.8
Other/prefer not to answer	4 (21)	1 (14)	5 (29)	
Education, <i>n</i> (%)				
High school	2 (11)	1 (14)	3 (18)	0.2
College	8 (42)	6 (86)	9 (53)	
Graduate/professional	9 (47)	0 (0)	5 (29)	
Received ICU intervention, <i>n</i> (%)	10 (53)	1 (14)	8 (47)	0.22
Used mental health services, <i>n</i> (%)	8 (42)	3 (43)	0 (0)	< 0.01
Post-ICU survey scores, mean (SD)				
HADS anxiety score	8.8 (4.9)	11.6 (5.9)	8.7 (4.0)	0.37
HADS depression score	6.5 (4.7)	9.9 (6.9)	6.6 (3.8)	0.26
IES-R total score	34.1 (14.0)	45.9 (22.9)	34.4 (17.4)	0.26
IES-R intrusion subscore	15.7 (6.0)	20.0 (8.6)	15.8 (7.3)	0.42
IES-R hyperarousal subscore	7.0 (5.1)	10.1 (8.2)	8.4 (5.1)	0.45
IES-R avoidance subscore	11.4 (5.6)	16.1 (7.6)	10.2 (6.2)	0.11

HADS = Hospital and Anxiety Disorder Scale, IES-R = Impact of Events Scale-Revised.

patients are displayed in **Supplemental Table 1** (<http://links.lww.com/CCX/B94>).

Supplemental Table 2 (<http://links.lww.com/CCX/B94>) contains descriptive statistics and correlations for psychologic measures. The average HADS anxiety score fell in the mild to borderline range (i.e., 8–10), while the average depression score fell within the normal range (i.e., 0–7). The mean IES-R score of 36 fell within the range of cut scores for identifying probable PTSD (i.e., 33 to 36).

Participants' Perceived Benefits of the Intervention

Six overarching themes about perceived benefits of the intervention emerged from interviews: 1) sense of community, 2) feeling heard, 3) sharing insights and support, 4) acceptance, 5) engagement in helpful activities and routines, and 6) assistance with finding purpose and moving forward. These themes are reported in **Table 2** and described below.

Sense of Community. Nearly all participants shared that they benefited from a sense of community and belonging fostered within the group. Specifically, participants reported that the group format led to reduced feelings of isolation due to the shared, unique experience of losing a family member to COVID-19.

Feeling Heard. Participants described the value of feeling heard and validated by others; this was especially the case for participants who frequently took on a caregiver role in their own lives or for those who felt their social support was dissipating in the long term. Participants also reported that the group provided a space to be vulnerable and express their emotions.

Sharing Insights and Support. The group format allowed participants to gain insights, perspectives, and coping strategies from people living through similar experiences. Participants also reported that they enjoyed providing support to other group members.

Acceptance. Participants shared that the group assisted them with acceptance of their emotions and things outside their control. Several participants reported feeling more accepting of their anger, sadness, and other grief-related emotions.

Helpful Activities and Routines. Participants reported that the group encouraged them to engage in helpful activities and routines. Examples include connecting with others, such as participating in more

family-oriented activities; developing new habits such as journaling, keeping a gratitude list, or generating a bucket list; and increased focus on their mental health or self-care. For several participants, having a scheduled time to participate in the group encouraged them to block off time to focus on their own needs.

Moving Forward and Finding Purpose. Participants shared that the group assisted them with moving forward and finding purpose in their lives. They described the benefit of being encouraged to think about what gives them meaning and fulfillment and asking questions such as “Where are you going from here?” Several participants described the importance of avoiding getting stuck in a “cycle of grief.”

Participants' Suggestions for Future Groups

Participants also provided suggestions for future groups, which fell into two categories: 1) feedback on the format of the intervention and 2) feedback on the content of the intervention. These themes are reported in **Supplemental Table 3** (<http://links.lww.com/CCX/B94>) and are described below.

Feedback on the Format of the Intervention. Participants preferred the virtual format of the intervention over in-person meetings due to safety concerns around meeting in person during the pandemic, as well as the increased flexibility and comfort of meeting virtually.

All participants were either satisfied with the total number of sessions or wished there had been more. Participants were also satisfied with the frequency and timing of sessions, such as the following participant: “You know, once a week, once a week is good? I think two weeks would be too far out, and more than one week would be too much.” A few participants wished more resources had been provided when the group ended, such as options for counseling or other support groups.

Participants were also satisfied with the size of groups, which typically ranged from three to five participants per session. However, some wished that there had been others in the group with more similarity in lived experience. For example, one participant wanted to speak with others who had lost a spouse, and two participants wanted to participate with younger people, such as adolescents who had lost a parent during the pandemic.

TABLE 2.
Participants' Perceived Benefits of the Intervention

Themes	Representative Quotes
Sense of community	<p>"It kind of took you out that place of isolation where you thought you were the only person that was having these kinds of thoughts or experiences and being a part of the group that you kind of have a sense of community and recognize you weren't alone."</p> <p>"We all shared that, that the experience came through COVID. So I think the idea of not, you know, going through it alone, is really the biggest takeaway from it."</p>
Feeling heard	<p>"the opportunity to share my story, just to be heard, I think is really key. A lot of times you feel like, nobody's listening."</p> <p>"I needed someplace to bounce my thoughts and my emotions and just say it out loud."</p> <p>"I think I've benefited more than I was able to, to express myself more openly to people that I don't know.. the group was helpful to me to make me open myself and to be just vulnerable."</p>
Sharing insights and support	<p>"There are certain things that I remember of our sessions that I will think back on, and that some have encouraged me to do, by listening to what they've done, and how they've handled different situations"</p> <p>"I'm a helper, I'm a fixer. That's what I do. So being part of the group gave me an opportunity to be who or what I am."</p>
Acceptance	<p>"It's okay to feel the way you're feeling...because everybody deals with it differently. Some people are angry. Some people are more sad [sic]. Some people are regretful. So there's a lot of emotions, and not every day, you're going to be feeling the same thing. So it's okay."</p> <p>"It sort of put me in a place where it makes me think it's okay, everything that I went through my emotions, you know, my fears, my pain, all of that."</p>
Helpful activities and routines	<p>"Taking that time and being part of the group and having that space with others that are feeling the same did kind of give me that opportunity to be able to process a little bit better."</p> <p>"There were some things that they pointed out, you know, that I can do and vice versa, you know, things that they can do learn from me. So it's like, sharing, you know, somebody mentioned a bucket list. And so I said, Yeah, you know because I said, I want to do things that I have never done now."</p>
Moving forward and finding purpose	<p>"I found the group largely helpful. Largely helpful was just realizing where I was in the process. Okay. And it is a process and that I may never be totally finished going through it, but I will try to continue to move forward through the process and not get stuck in um, become stagnant in my grieving."</p> <p>"Finding purpose was also a big theme that I liked. You know, how do we move on? moving forward?"</p>

Feedback on Content of the Intervention. Overall, participants were satisfied with group discussion topics, particularly those related to difficult emotions, sleep, and finding purpose (Supplemental Table 3, <http://links.lww.com/CCX/B94>). Participants wished there had been more time spent on the topics of anger and isolation. They also suggested topics for the future, including caregiver self-care, strategies for supporting others in grief (e.g., children), and challenges unique to losing a spouse.

Feedback regarding the facilitation style of sessions and use of workbooks was mixed. Some participants appreciated that the group was free to divert from a fixed agenda during meetings and preferred that the workbook remain optional. Others wished there was more emphasis on

completing the workbook or suggested more recaps and reviews be given to improve the structure of the group.

Pre-to-Post Change in Psychologic Measures of Anxiety, Depression, and PTSD

Significant and moderate reductions were observed in Anxiety, Depression, and PTSD symptoms (Supplemental Table 2, <http://links.lww.com/CCX/B94>). Results are illustrated in **Figures 2** and **3**. Of note, reductions in PTSD Avoidance symptoms were large. As can be seen in the figures, the scores decreased throughout treatment. Individual differences are evident in the slope of change.

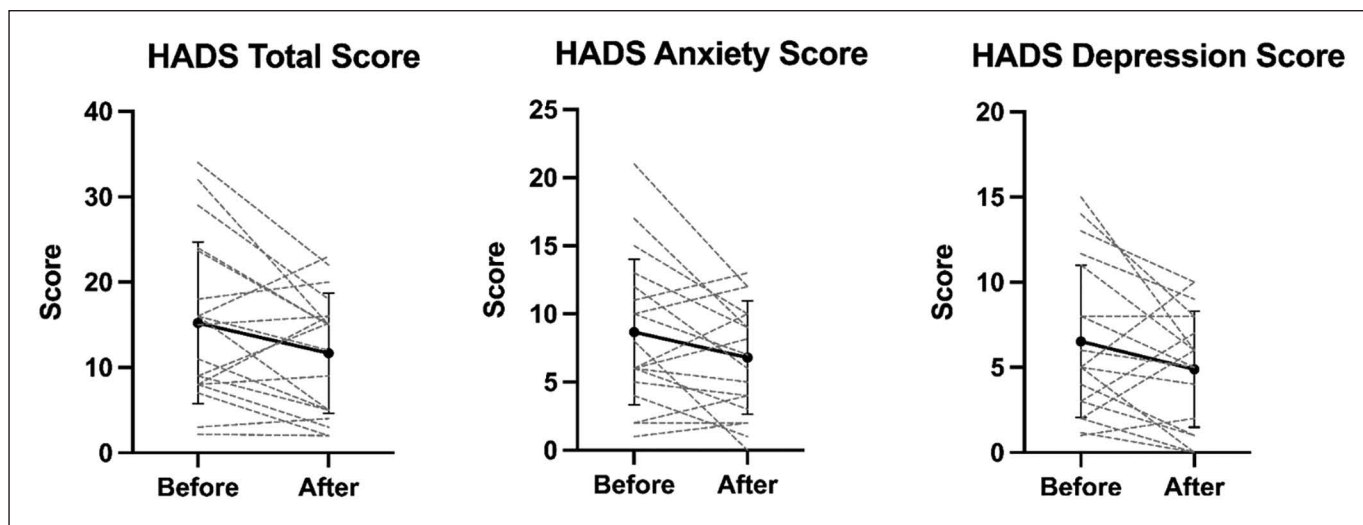


Figure 2. Pre- and post-treatment comparison of Hospital and Anxiety Disorder Scale (HADS) scores.

DISCUSSION

The current study aimed to assess participants' engagement and response to a group-based behavioral activation intervention following the death of a family member from COVID-19. The rate of completion (73.1%) was comparable to rates of completion in trials of other psychosocial interventions (11, 25, 26). Surrogates who completed the intervention reported that they valued the opportunity to interact with and support others who were grieving. This result suggests that an online group-based behavioral activation may offer an avenue for supporting bereaved surrogates as they recover from the death of a loved one from COVID-19.

Preliminary estimates suggested that participation was associated with significant and moderate reductions in anxiety, depression, and PTSD symptoms. These findings are consistent with the broader literature showing that cognitive-behavioral treatments are efficacious in the treatment of PTSD, anxiety, mood disorders, and complicated grief (27–29). Given the lack of control group, these reductions could be confounded by normative processing of grief.

Several interventions have been developed to support the psychosocial health of decision-making surrogates prior to COVID-19. Among these interventions, however, outcomes have been mixed. For example, one randomized controlled trial found that palliative care consultation during ICU stays increased rates of PTSD in families (30). Other studies have demonstrated a more promising impact on PTSD symptoms, such as those involving behavioral competencies that

empower surrogates and families to remain engaged with the patient in the ICU (31). Another study used communication facilitators during the ICU to assess family communication needs and attachment styles. These facilitators provided emotional support, participated in family conferences, and offered follow-up after patient discharge. Anxiety and PTSD symptoms of those receiving communication facilitation did not differ from those who received usual care, however, their depressive symptoms were lower at 6-month follow-up (32).

Psychosocial interventions for patients or families after the patient's discharge or death have also yielded null or paradoxical effects. A team-based primary care intervention for survivors of sepsis performed similarly to usual care (33). Sending condolence letters to surviving families following the ICU stay led to increased PTSD symptoms (34). Coping skills training for patients and family after an ICU stay did not outperform education for most participants, although coping skills training was of more benefit for participants with higher baseline distress (35). Thus, targeted interventions may be more efficacious when directed at individuals with higher levels of mental health needs following the ICU. Thus, an alternative approach may involve allowing for a period of possible normative recovery that is typical in the aftermath of severe stress (36) and subsequently treating surrogates with the most persistent symptoms of anxiety, depression, and/or PTSD symptoms. Participants can be encouraged to view Behavioral Activation as one strategy for more efficiently reengaging activities that may be perceived as straining or stressful.

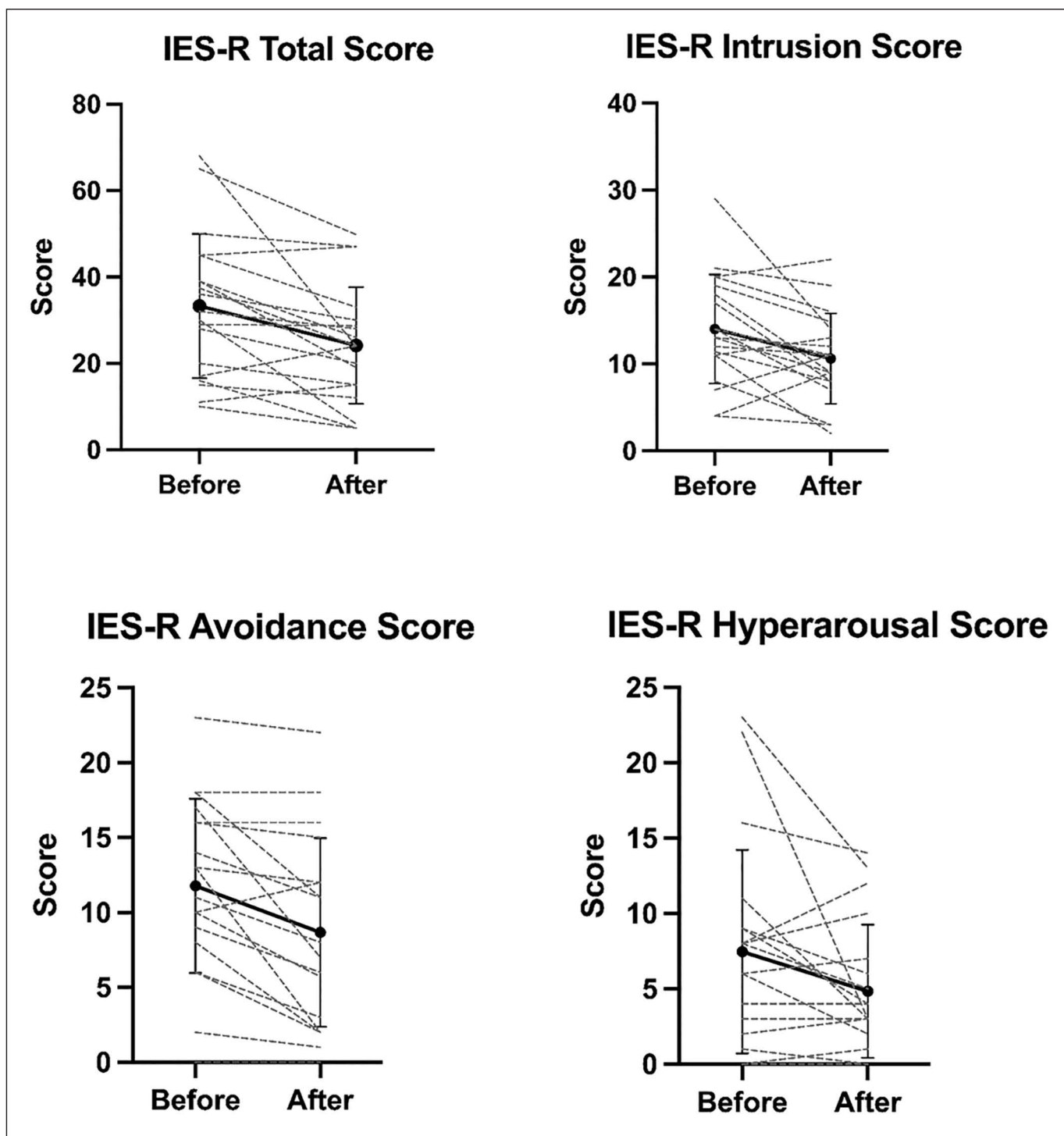


Figure 3. Pre- and post-treatment comparison of Impact of Events Scale-Revised (IES-R) scores.

This was a preliminary trial with limitations. Selection bias may have led to more favorable qualitative feedback if agreeable individuals were more inclined to participate. Our preliminary estimates of effect sizes were also derived from a single arm. Due to the absence of a control group, it is unclear whether self-reported improvements reflected natural

recovery from stressful events, demand characteristics, or the receipt of other treatments. The context of the COVID-19 pandemic may also limit the generalizability of the results. Individuals may have been more inclined to participate in an online intervention due to isolation and loneliness from the pandemic rather than distressing experiences specifically tied to their roles as

surrogates. Given the reliance on self-report measures, the study was unable to differentiate psychiatric symptoms from normal grieving. Participants who left the study did not participate in interviews that could have identified their reasons for discontinuing.

CONCLUSIONS

This short-term intervention was conducted in approximately half the number of sessions used in other behavioral activation interventions for grief (11) and was delivered in an online format. Group-based behavioral activation may have the potential to address distress in family members of deceased COVID-19 patients, particularly when in-person contact is not feasible, or when time constraints and competing responsibilities preclude families from participating in more time-intensive interventions. Whereas behaviorally focused family rituals identified by Amass et al (31) may be useful for supporting the psychosocial adjustment during the ICU stay, brief behavioral activation may be useful for supporting reengagement in meaningful routines following stressful events such as patient death in the ICU. Further research is needed to ascertain whether online group-based behavioral activation is a feasible and efficacious approach to reducing distress and psychiatric symptoms in ICU surrogates following the death of patients to COVID-19 and other conditions.

1 Department of Psychology, Central Michigan University, Mt. Pleasant, MI.

2 Rush University Medical College, Chicago, IL.

3 Department of Psychiatry and Behavioral Sciences, Rush University Medical Center, Chicago, IL.

4 Division of Pulmonary and Critical Care Medicine, Rush University Medical Center, Chicago, IL.

Drs. Greenberg and Gerhart are co-senior authors.

Supplemental digital content is available for this article. Direct URL citations appear in the printed text and are provided in the HTML and PDF versions of this article on the journal's website (<http://journals.lww.com/ccejournal>).

Drs. Hebert, Banayan, Greenberg, and Gerhart conceptualized the study and intervention plan. Ms. England, Ms. Lietzau, and Mr. Vu assisted with data collection. England, Lietzau, Vu, and Dr. Greenberg, and Dr. Gerhart analyzed the data. Ms. England, Ms. Lietzau, and Dr. Gerhart wrote the initial article draft. All authors edited and revised the document.

Supported, in part, by grant from the Rush Coronavirus Research Fund Award.

The authors have disclosed that they do not have any potential conflicts of interest.

For information regarding this article, E-mail: gerha1ji@cmich.edu

Clinical Trial Registration: NCT04501445.

REFERENCES

1. Simpson N, Milnes S, Steinfors D: Don't forget shared decision-making in the COVID-19 crisis. *Intern Med J* 2020; 50:761–763
2. Kross EK, Engelberg RA, Gries CJ, et al: ICU care associated with symptoms of depression and posttraumatic stress disorder among family members of patients who die in the ICU. *Chest* 2011; 139:795–801
3. Marroquín B, Vine V, Morgan R: Mental health during the COVID-19 pandemic: Effects of stay-at-home policies, social distancing behavior, and social resources. *Psychiatry Res* 2020; 293:113419
4. Lopez L, Hart LH, Katz MH: Racial and ethnic health disparities related to COVID-19. *JAMA* 2021; 325:719–720
5. Azoulay E, Resche-Rigon M, Megarbane B, et al: Association of COVID-19 acute respiratory distress syndrome with symptoms of posttraumatic stress disorder in family members after ICU discharge. *JAMA* 2022; 327:1042–1050
6. Greenberg JA, Basapur S, Quinn T, et al: Psychological symptoms among surrogates of critically ill patients during and before the COVID-19 pandemic. *Chest* 2021; 159:2318–2320
7. Sarigiannis K, Tringali J, Hebert C, et al: Psychological symptoms after discharge from the intensive care unit among families of patients with COVID-19. American Thoracic Society International Conference Meetings Abstracts American Thoracic Society International Conference Meetings Abstracts. San Diego, CA, May 14, 2021, pp A1498–A1498
8. Hobfoll SE, Watson P, Bell CC, et al: Five essential elements of immediate and mid-term mass trauma intervention: Empirical evidence. *Psychiatry* 2007; 70:283–315; discussion 316–369
9. Jacobson NS, Martell CR, Dimidjian S: Behavioral activation treatment for depression: Returning to contextual roots. *Clin Psychol: Sci Pract* 2001; 8:255–270
10. Kanter JW, Manos RC, Bowe WM, et al: What is behavioral activation?: A review of the empirical literature. *Clin Psychol Rev* 2010; 30:608–620
11. Papa A, Sewell MT, Garrison-Diehn C, et al: A randomized open trial assessing the feasibility of behavioral activation for pathological grief responding. *Behav Ther* 2013; 44:639–650
12. Yalom ID, Greaves C: Group therapy with the terminally ill. *Am J Psychiatry* 1977; 134:396–400
13. National Center for Complementary and Integrative Health: The R34: An Opportunity for Critical Groundwork in Clinical Trials Research. 2015. Available at: <https://www.nccih.nih.gov/research/blog/the-r34-an-opportunity-for-critical-groundwork-in-clinical-trials-research>. Accessed September 10, 2022
14. Greenberg JA, Basapur S, Quinn T, et al: Daily written care summaries for families of critically ill patients: A randomized controlled trial. *Crit Care Med* 2022; 50:1296–1305
15. Schnider KR, Elhai JD, Gray MJ: Coping style use predicts posttraumatic stress and complicated grief symptom severity among college students reporting a traumatic loss. *J Couns Psychol* 2007; 54:344–350

16. Boelen PA, van den Bout J: Anxious and depressive avoidance and symptoms of prolonged grief, depression, and post-traumatic stress disorder. *Psychol Belg* 2010; 50:49–67
17. Djelantik AAAMJ, Robinaugh DJ, Kleber RJ, et al: Symptomatology following loss and trauma: Latent class and network analyses of prolonged grief disorder, posttraumatic stress disorder, and depression in a treatment-seeking trauma-exposed sample. *Depress Anxiety* 2020; 37:26–34
18. Snaith RP: The hospital anxiety and depression scale. *Health Qual Life Outcomes* 2003; 1:1–4
19. Creamer M, Bell R, Failla S: Psychometric properties of the impact of event scale—revised. *Behav Res Ther* 2003; 41:1489–1496
20. R Core Team: R: A Language and Environment for Statistical Computing. Vienna, Austria, R Foundation for Statistical Computing, 2022. Available at: <https://www.R-project.org/>
21. Bates D, Mächler M, Bolker BM, et al: Fitting linear mixed-effects models using lme4. *J Stat Softw* 2015; 67:1–48
22. Mattan M, Ben-Shachar S: Package “Effectsize” Title Indices of Effect Size and Standardized Parameters. 2022. Available at: <https://orcid.org/0000-0002-4287-4801>. Accessed January 16, 2022
23. Cohen J: A power primer. *Psychol Bull* 1992; 112:155–159
24. Singmann H, Bolker B, Westfall J, et al: Afex: Analysis of Factorial Experiments. R Package Version 0.18–0. 2016. Available at: <https://CRAN.R-project.org/package=afex>
25. van Minnen A, Arntz A, Keijsers GPJ: Prolonged exposure in patients with chronic PTSD: Predictors of treatment outcome and dropout. *Behav Res Ther* 2002; 40:439–457
26. Trivedi RB, Nieuwsma JA, Williams JW: Examination of the utility of psychotherapy for patients with treatment resistant depression: A systematic review. *J Gen Intern Med* 2011; 26:643–650
27. Wagner B, Rosenberg N, Hofmann L, et al: Web-based bereavement care: A systematic review and meta-analysis. *Front Psychiatry* 2020; 11:1
28. Luo C, Sanger N, Singhal N, et al: A comparison of electronically-delivered and face to face cognitive behavioural therapies in depressive disorders: A systematic review and meta-analysis. *EClinicalMedicine* 2020; 24:100442
29. Lewis C, Roberts NP, Andrew M, et al: Psychological therapies for post-traumatic stress disorder in adults: Systematic review and meta-analysis. *Eur J Psychotraumatol* 2020; 11:1729633
30. Carson SS, Cox CE, Wallenstein S, et al: Effect of palliative care-led meetings for families of patients with chronic critical illness: A randomized clinical trial. *JAMA* 2016; 316:51–62
31. Amass TH, Villa G, OMahony S, et al: Family care rituals in the ICU to reduce symptoms of post-traumatic stress disorder in family members—a multicenter, multinational, before-and-after intervention trial. *Crit Care Med* 2020; 48:176–184
32. Curtis JR, Treece PD, Nielsen EL, et al: Randomized trial of communication facilitators to reduce family distress and intensity of end-of-life care. *Am J Respir Crit Care Med* 2016; 193:154–162
33. Schmidt K, Worrack S, von Korff M, et al; SMOOTH Study Group: Effect of a primary care management intervention on mental-health-related quality of life among survivors of sepsis: A randomized clinical trial. *JAMA* 2016; 315:2703–2711
34. Kentish-Barnes N, Chevret S, Champigneulle B, et al: Effect of a condolence letter on grief symptoms among relatives of patients who died in the ICU: A randomized clinical trial. *Intensive Care Med* 2017; 43:4473–4484
35. Cox CE, Hough CL, Carson SS, et al: Effects of a telephone- and web-based coping skills training program compared with an education program for survivors of critical illness and their family members. A randomized clinical trial. *Am J Respir Crit Care Med* 2018; 197:66–78
36. Galatzer-Levy IR, Huang SH, Bonanno GA: Trajectories of resilience and dysfunction following potential trauma: A review and statistical evaluation. *Clin Psychol Rev* 2018; 63:41–55