

BRIEF REPORT

The Impact of COVID-19 on Psychotherapy Participation Among Individuals With Posttraumatic Stress Disorder Enrolled in Treatment Research

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The onset of the COVID-19 pandemic disrupted many aspects of daily life and required a rapid and unprecedented shift in psychotherapy delivery from in-person to telemental health. In the present study, we explored the impact of the pandemic on individuals' ability to participate in posttraumatic stress disorder (PTSD) psychotherapy and the association between the impact of COVID-19 impact on health and financial well-being and psychotherapy participation. Participants ($N = 161$, 63.2% male, $M_{\text{age}} = 42.7$ years) were United States military veterans ($n = 108$), active duty military personnel ($n = 12$), and civilians ($n = 6$), who were participating in one of nine PTSD treatment trials. The results indicate a predominately negative COVID-19 impact on therapy participation, although some participants (26.1%) found attending therapy sessions through telehealth to be easier than in-person therapy. Most participants (66.7%) reported that completing in vivo exposure homework became harder during the pandemic. Moreover, the impact of the pandemic on PTSD symptom severity and daily stress were each associated with increased difficulty with aspects of therapy participation. The findings highlight the unique challenges to engaging in PTSD treatment during the pandemic as well as a negative impact on daily stress and PTSD severity, both of which were related to treatment engagement difficulties.

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The onset of the COVID-19 pandemic necessitated a rapid shift in mental health service delivery from in-person to a telemental health modality in the first few weeks of the pandemic. Telemental health can address barriers to in-person mental health care, including travel time, privacy concerns, a lack of mental health providers, and perceived stigma (Stecker et al., 2007), and, for first-line posttraumatic stress disorder (PTSD) therapies, it appears to be comparably effective to in-person PTSD treatment with regard to outcomes (Acierno et al., 2017; Morland et al., 2014) and therapeutic alliance (Gros et al., 2018). However, before the pandemic, findings from one study demonstrated that attitudes toward telemental health among veterans were mixed (Goetter et al., 2019).

The COVID-19 pandemic and associated transition to telemental health may have impacted veterans' experience of PTSD treatment. Specifically, spending more time at home due to "shelter in place" orders and physical-distancing guidelines may have facilitated or hindered therapy participation depending on factors related to veterans' home environment (e.g., internet connection, privacy) and preferences. The impact of the pandemic may differ across aspects of treatment, including session attendance and homework completion. Homework for exposure therapy, a first-line PTSD treatment (Department of Veterans Affairs and Department of Defense, 2017) that encourages approaching trauma-related situations, such as crowded areas, could be more difficult or not feasible during the pandemic. Pandemic-related health and financial stressors might also make therapy participation more difficult. These impacts potentially have important implications for treatment outcome studies conducted during the pandemic. To understand the impact of the COVID-19 pandemic among individuals enrolled in PTSD treatment research, we explored (a) the impact of the pandemic on veterans' perceived ability to participate in psychotherapy, (b) the impact of the pandemic on health and financial well-being, and (c) the associations between PTSD psychotherapy participation and health and financial well-being.

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Method

Participants and Procedure

Participants were 161 treatment-seeking individuals, predominantly veterans, diagnosed with PTSD ($n = 147$) or PTSD and alcohol use disorder (AUD; $n = 14$) in one of nine PTSD treatment trials. Active psychosis and suicidal ideation warranting crisis intervention were exclusion criteria for all trials. Each trial had additional study-specific exclusion criteria; information about the methods of the trials is reported elsewhere (Back et al., 2020; Capone et al., 2021; Foa et al., 2019; Hernandez-Tejada et al., 2020; see also clinicaltrials.gov entries NCT03176953, NCT03962504, NCT04471207, NCT03581981, and NCT03810456). One third of participants sought in-person care and were then switched to telemental health during the pandemic; two thirds of the sample initially sought care via telemental health during the pandemic.

Participants were enrolled in one of nine PTSD treatment trials: (a) trauma-informed guilt reduction therapy (TriGR; Norman et al., 2019) or supportive care ($N = 5$; blind not broken), (b) N-acetylcysteine plus cognitive behavioral therapy (CBT) for AUD (Kadden, 1995) or placebo plus CBT for AUD ($N = 6$), (c) transdiagnostic CBT or treatment as usual (TAU; $N = 31$), (d) written exposure therapy (Sloan & Marx, 2019) or prolonged exposure (PE; Foa et al., 2007, 2019; $N = 4$), (e) PE delivered in 60- or 90-min sessions ($N = 11$), (f) PE for primary care (Rauch et al., 2017) or TAU ($N = 19$), (g) PE with or without topiramate ($N = 14$), (h) PE with two types of peer support ($N = 36$), and (i) PE with or without technology enhancements ($N = 35$).

Participants completed a survey (see Measures) during one of their regularly scheduled assessment time points, which varied across the included studies. Participants who completed the survey at baseline ($n = 13$) did not answer questions about the impact of the pandemic on therapy. All available data were combined for analysis. The study was approved by the Institutional Review Boards at Michael E. DeBakey VA Medical Center, Baylor College of Medicine, Medical University of South Carolina, Ralph H. Johnson VA Medical Center, and the San Diego VA.

Measures

The impact of COVID-19 on PTSD treatment research was assessed using a 10-item self-report measure created for the present study. Five items were used to assess the pandemic's impact on respondents' ability to participate in PTSD psychotherapy, including attending sessions; completing therapy homework; completing in vivo exposure therapy homework, if applicable (i.e., "Completing therapy homework assignments that involve exposure [that is, going to places or doing things that made you anxious in the past, that are now part of your therapy homework] became..."); and the overall impact of the pandemic on therapy participation; these items were rated on

a Likert-type scale with response options ranging from *a lot easier/better* to *a lot harder/worse*. Two items regarding the overall impact of the pandemic asked respondents to explain their answers in an open-text field. Cronbach's alpha for these items was .81. Five items were used to assess the pandemic's impact on financial well-being and physical health, including the impact on household income, rated using options ranging from *earning a lot less* to *earning a lot more*; one's own COVID-19 infection or the infection of someone close to them, with items rated as "yes," "no," or "unsure," along with a severity rating, if applicable (i.e., "mild," "moderate," or "severe"); and the pandemic's impact on daily stress, rated using a scale with options ranging from *a lot less stress* to *a lot more stress*, and PTSD symptoms (i.e., "The Coronavirus pandemic has made my PTSD symptoms..."), with options ranging from *a lot better* to *a lot worse*.

Data Analysis

Descriptive analyses were used to characterize the sample, and bar graphs were used to represent frequencies from the survey. Qualitative data were reviewed by the first author to inductively identify themes; repeated themes were coded and grouped together, and the number of participants who reported each theme was noted. Mann-Whitney *U* tests were used to examine the impact of switching from in-person therapy to telemental health versus starting treatment in a telemental modality, and Spearman's rho was used to examine associations among health and financial well-being and therapy participation.

Results

Sample demographic characteristics are shown in Table 1. Figure 1 (Panels A–F) depicts survey results. In total, 40 participants were missing data on the therapy participation variables because they had not yet started therapy when the survey was administered (i.e., the survey was completed at baseline or they were randomized to TAU and had not begun treatment).

Research Protocol Therapy Participation

As shown in Figure 1, Panel A, most participants reported that the pandemic made attending therapy sessions more difficult, with 58.8% endorsing the response options of *a little harder* or *a lot harder*; however, the distribution was bimodal, with a subset of participants reporting that attending therapy sessions was easier (i.e., 26.1% endorsed the responses *a little easier* or *a lot easier*). Table 2 shows the most frequent qualitative themes identified among participants who indicated that session attendance was easier and those who indicated it was harder, along with illustrative quotes. Figure 1, Panel B shows that the pandemic did not impact most participants' ability to complete therapy homework in general, whereas 66.7% of the sample reported that completing in vivo exposure homework

Table 1
Participant Demographic Characteristics

Variable	<i>M</i>	<i>SD</i>
Age (years)	42.7	11.7
	<i>n</i>	%
Gender		
Men	72	63.2
Women	45	28.0
Transgender women	1	0.6
Race		
White	54	43.5
Black or African American	51	41.1
Asian	5	4.0
American Indian or Alaska Native	1	0.8
Native Hawaiian or Pacific Islander	1	0.8
Other ^b	11	8.9
Ethnicity		
Hispanic or Latinx	20	16.0
Military status		
Veteran	108	85.7
Active duty	12	9.5
Civilian	6	4.8

Note. *N* = 126.

^aDemographic data for participants in one trial (i.e., prolonged exposure and medication; *n* = 35) were not linked to the COVID-19 survey data and, therefore, not available for analysis. ^bMost participants who indicated "other" for race identified as biracial.

became harder. Overall, the pandemic made therapy participation a little harder for participants (see Figure 1, Panel C). Participants who started in-person therapy and switched to telemental health reported a higher perceived negative impact of the pandemic on therapy homework, $U(146) = 1663.5$, $p = .002$, and therapy overall, $U(119) = 956.5$, $p < .001$, compared to those who initiated treatment via telemental health (66.7%). There were no between-group differences regarding session attendance or exposure homework, $ps = .211-.275$.

Health and Financial Well-Being

The pandemic had a neutral (50.0%) or negative impact (43.8%) on household income (Figure, Panel D). Nearly one third of participants reported that either they had personally been infected with COVID-19 (13.0%; mild symptoms, 25.7%; moderate symptoms, 42.9%) or someone close to them had been infected (23.6%, Figure 1, Panel E). Most participants reported a negative impact (i.e., rating of *a little worse* or *a lot worse*) of the pandemic on daily stress (61.9%) and PTSD symptom severity (54.1%; see Figure 1, Panel F).

Figure 1

COVID-19 Pandemic Impact on (A) Attending Therapy Sessions, (B) Completing Therapy Homework, (C) Overall Therapy Experience, (D) Household Income, (E) Coronavirus Infection, and (F) Daily Stress and Symptoms of Posttraumatic Stress Disorder (PTSD)

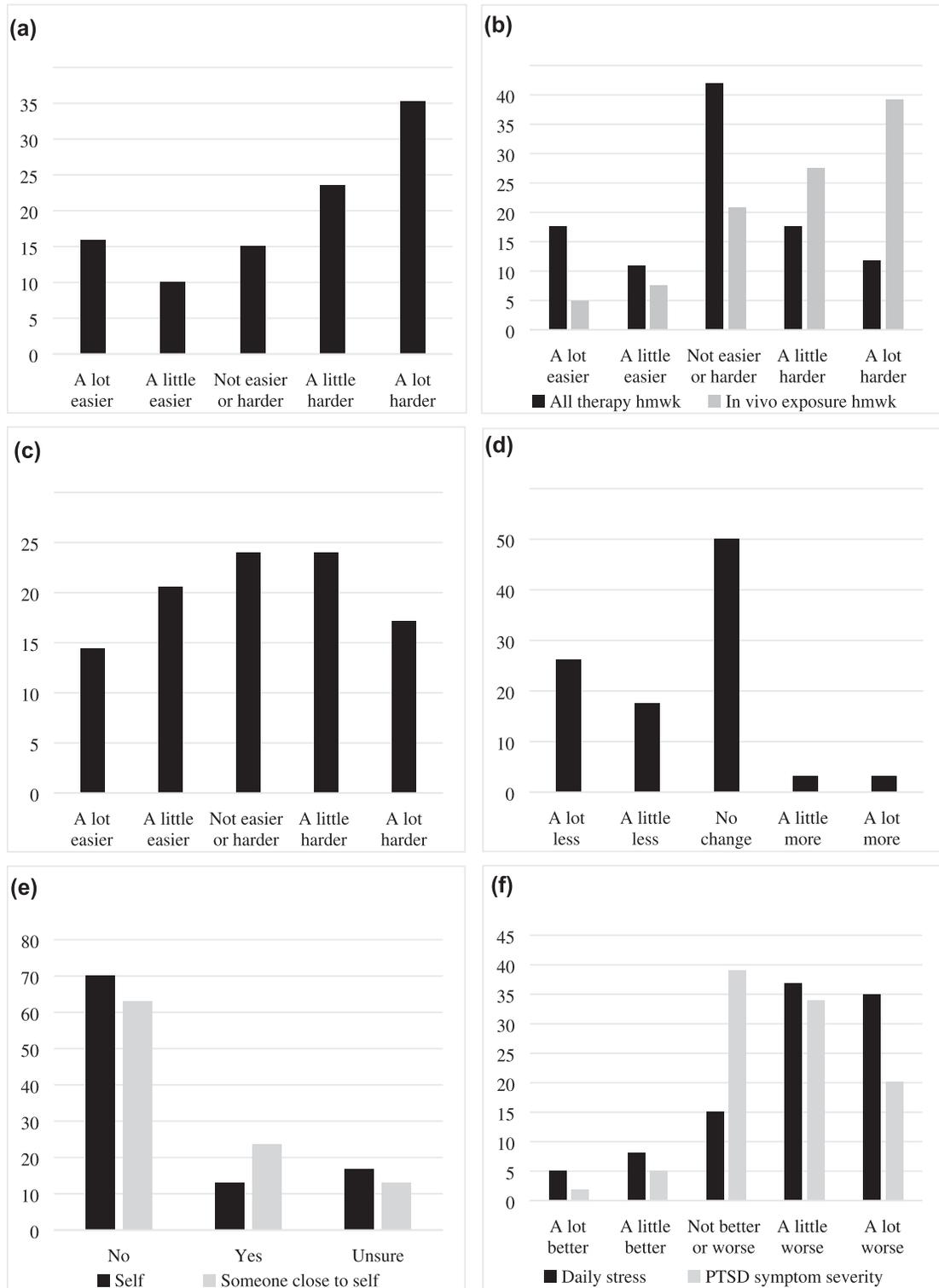


Table 2

Qualitative Themes and Illustrative Quotes About the Impact of the Pandemic on Attending Therapy Sessions

Pandemic made attending therapy sessions easier (<i>n</i> = 34)		Pandemic made attending therapy sessions harder (<i>n</i> = 85)	
<i>Telehealth is more convenient</i> (<i>n</i> = 15)	“Don’t have to commute long distance, able to work from home and can, therefore, adjust schedule more easily.”	<i>Telehealth is less convenient</i> (<i>n</i> = 6)	“More comfortable going in for therapy, having to do it from home is more stressful, in an office I can complete without interruptions.”
<i>Telehealth is easier</i> (<i>n</i> = 4)	“Talking to doctors via video is a little easier.”	<i>Telehealth is less effective for connecting with the therapist</i> (<i>n</i> = 9)	“Face-to-face interaction, I feel, is very critical, especially to me personally. I’ve never like talking on the phone or conversing through video, just a personal preference.”
<i>Less anxiety because of movement restriction</i> (<i>n</i> = 3)	“Not out in public as much, and most people tend to keep their distance because of the requirement for social distancing.”	<i>Movement restrictions</i> (<i>n</i> = 7)	“Therapist wants me to be active outdoors, but I can’t do that as easily.”
		<i>Couldn’t do in-person/prefer in-person</i> (<i>n</i> = 7)	“Because of no face-to-face options.”
		<i>More daily stress</i> (<i>n</i> = 7)	“So many extra events have happened that wouldn’t have happened with this self-isolation and all the restrictions.”

Associations Among Health, Financial Well-Being, and Therapy Participation

Neither having or suspecting a COVID-19 infection in oneself or someone close nor the pandemic impact on household income were related to the therapy participation variables, *ps* = .054–.665. The negative impact of COVID-19 on PTSD severity was related to the overall pandemic impact on therapy, *r_s*(146) = .242, *p* = .003, but not session attendance, *p* = .719, or homework variables, *ps* = .079–.084. The negative impact of daily stress was related to difficulty completing therapy homework in general, *r_s*(118) = .191, *p* = .038, and the overall pandemic impact on therapy, *r_s*(145) = .197, *p* = .018, but not attending sessions or completing in vivo exposure homework, *ps* = .051–.226.

Discussion

The present findings show that the impact of the COVID-19 pandemic has been largely negative for participants engaged in PTSD treatment research. There were mixed perceptions of telemental health as a treatment modality, with some participants preferring it but others expressing negative views, particularly those who sought in-person care first and had to switch to telemental health during the pandemic. It is likely that forcing an unexpected change in treatment modality because of the pandemic was responsible for this finding. In addition, some participants (*n* = 19) experienced a delay in care of approxi-

mately 2 weeks during which study approvals to use telemental health were secured. The stress of the pandemic may have also created added burdens to home life that made participating in psychotherapy from home less desirable (e.g., too many people at home, no privacy). Although homework completion overall was not negatively impacted, completing in vivo exposure homework was more difficult for most participants, likely due to COVID-19 restrictions that limited options for in vivo homework (see Wells et al., 2020).

Although the impact of COVID-19 infections and lost work or income due to the pandemic was significant in the sample, these factors largely did not interfere with therapy participation. This highlights a potential advantage of telemental health, as participants did not have to travel, and incur expenses, to receive care. Notably, over half of the sample reported a worsening of their PTSD symptoms and increased daily stress, which were negatively associated with therapy participation. These findings point to a critical need for mental health care that may increase over time as the pandemic continues. Although participating in PTSD treatment may be challenging during the pandemic, given the clinical need and availability of quality telemental health options, the present findings suggest that PTSD treatment may be more important now than ever.

Participants were drawn from research trials at various stages of completion that shared an inclusion criterion (e.g., PTSD diagnosis), treatment approach (e.g., psychotherapy), and a COVID-19 pandemic cohort effect. Sample sizes from some individual studies were very small, limiting generalization to any

individual groups. Another study limitation was the reliance on self-report measures.

The COVID-19 pandemic has resulted in opportunities to safely expand access to care through telemental health for patients who may not have sought in-person PTSD treatment. However, it is important to allow patients the choice to decide whether and how they receive psychotherapy given the different perceptions of telemental health. Further, whether and how the pandemic impacts treatment response will need to be teased apart when analyses of the outcomes of the ongoing studies occur. However, measuring the impact of the pandemic among study participants clearly will be necessary for interpreting the final study results given the pandemic impact on treatment engagement.

Open Practices Statement

The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials should be sent via email to the lead author at carmen.mclean4@va.gov .

References

- Acierno, R., Knapp, R., Tuerk, P., Gilmore, A. K., Lejuez, C., Ruggiero, K., Muzzy, W., Egede, L., Hernandez-Tejada, M. A., & Foa, E. B. (2017). A non-inferiority trial of prolonged exposure for posttraumatic stress disorder: In-person versus home-based telehealth. *Behaviour Research and Therapy*, *89*, 57–65. <https://doi.org/10.1016/j.brat.2016.11.009>
- Back, S. E., Gray, K., Santa Ana, E., Jones, J. L., Jarnecke, A. M., Joseph, J. E., Prisciandara, J., Killeen, T., Brown, D. G., Taimina, L., Compean, E., Malcolm, R., Flanagan, J. C., & Kalivas, P. W. (2020). N-acetylcysteine for the treatment of comorbid alcohol use disorder and posttraumatic stress disorder: Design and methodology of a randomized clinical trial. *Contemporary Clinical Trials*, *91*, 105961. <https://doi.org/10.1016/j.cct.2020.105961>
- Capone, C., Norman, S. B., Haller, M., Davis, B., Shea, M. T., Browne, K., Lang, A. J., Schnurr, P. P., Golshan, S., Afari, N., Pittman, J., Allard, C. B., & Westendorf, L. (2021). Trauma-informed guilt reduction (TriGR) therapy for guilt, shame, and moral injury resulting from trauma: Rationale, design, and methodology of a two-site randomized controlled trial. *Contemporary Clinical Trials*, *101*, 106251. <https://doi.org/10.1016/j.cct.2020.106251>
- Foa, E. B., Hembree, E., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences: Therapist guide*. Oxford University Press. <https://doi.org/10.1093/med:psych/9780195308501.001.0001>
- Foa, E. B., Hembree, E. A., Rothbaum, B. O., & Rauch, S. A. M. (2019). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences—Therapist Guide* (2nd ed.). Oxford University Press. <https://doi.org/10.1093/med:psych/9780190926939.001.0001>
- Goetter, E. M., Blackburn, A. M., Bui, E., Laifer, L. M., & Simon, N. (2019). Veterans' prospective attitudes about mental health treatment using telehealth. *Journal of Psychosocial Nursing and Mental Health Services*, *57*(9), 38–43. <https://doi.org/10.3928/02793695-20190531-02>
- Gros, D. F., Lancaster, C. L., López, C. M., & Acierno, R. (2018). Treatment satisfaction of home-based telehealth versus in-person delivery of prolonged exposure for combat-related PTSD in veterans. *Journal of Telemedicine and Telecare*, *24*(1), 51–55. <https://doi.org/10.1177/1357633X16671096>
- Hernandez-Tejada, M. A., Muzzy, W., Price, M., Hamski, S., Hart, S., Foa, E., & Acierno, R. (2020). Peer support during in vivo exposure homework to reverse attrition from prolonged exposure therapy for posttraumatic stress disorder (PTSD): Description of a randomized controlled trial. *Trials*, *21*(1), 1–11. <https://doi.org/10.1186/s13063-020-04302-5>
- Kadden, R. (1995). *Cognitive behavioral coping skills therapy manual: A clinical research guide for therapists treating individuals with alcohol abuse and dependence* (No. 94). U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism.
- Morland, L. A., Mackintosh, M. A., Greene, C. J., Rosen, C. S., Chard, K. M., Resick, P., & Frueh, B. C. (2014). Cognitive processing therapy for post-traumatic stress disorder delivered to rural veterans via telemental health: A randomized noninferiority clinical trial. *The Journal of Clinical Psychiatry*, *75*(5), 470–476. <http://doi.org/10.4088/JCP.13m08842>
- Norman, S., Allard, C., Browne, K., Capone, C., Davis, B., & Kubany, E. (2019). *Trauma informed guilt reduction therapy: Treating guilt and shame resulting from trauma and moral injury*. Academic Press.
- Rauch, S. A., Cigrang, J., Austern, D., Evans, A., & the STRONG STAR Consortium. (2017). Expanding the reach of effective PTSD treatment into primary care: Prolonged exposure for primary care. *Focus*, *15*(4), 406–410. <https://doi.org/10.1176/appi.focus.20170021>
- Sloan, D. M., & Marx, B. P. (2019). *Written exposure therapy for PTSD: A brief treatment approach for mental health professionals*. American Psychological Association.
- Stecker, T., Fortney, J. C., Hamilton, F., Ajzen, I. (2007). An assessment of beliefs about mental health care among veterans who served in Iraq. *Psychiatry Services*, *58*(10), 1358–1361. <https://doi.org/10.1176/appi.ps.58.10.1358>
- Veterans Health Administration, & Department of Defense. (2017). *VA/DoD clinical practice guideline for management of post-traumatic stress disorder and acute stress disorder*. Veterans Health Administration and Department of Defense.
- Wells, S. Y., Morland, L. A., Wilhite, E. R., Grubbs, K. M., Rauch, S. A., Acierno, R., & McLean, C. P. (2020). Delivering prolonged exposure therapy via videoconferencing during the COVID-19 pandemic: An overview of the research and special considerations for providers. *Journal of Traumatic Stress*, *33*(4), 380–390. <https://doi.org/10.1002/jts.22573>