

AWARD NUMBER: W81XWH-14-1-0362

TITLE: HomeFront Strong: Building Resiliency in Military Families

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REPORT DATE: December 2021

TYPE OF REPORT: Final

PREPARED FOR: U.S. Army Medical Research and Development Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
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REPORT DOCUMENTATION PAGE		Form Approved OMB No. 0704-0188
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1. REPORT DATE December 2021	2. REPORT TYPE Final	3. DATES COVERED 01SEP2014 – 31AUG2021
4. TITLE AND SUBTITLE HomeFront Strong: Building Resiliency in Military Families		5a. CONTRACT NUMBER W81XWH-14-1-0362
		5b. GRANT NUMBER
		5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S) Michelle Kees, PhD E-Mail: mkees@med.umich.edu		5d. PROJECT NUMBER
		5e. TASK NUMBER
		5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Regents of the University of Michigan Kathryn DeWitt 503 Thompson Street Ann Arbor, MI 48109-1340		8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Development Command Fort Detrick, Maryland 21702-5012		10. SPONSOR/MONITOR'S ACRONYM(S)
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited		
13. SUPPLEMENTARY NOTES		

14. ABSTRACT

The project aimed to improve the psychological health and well-being of military and veteran families residing in civilian communities by implementing and evaluating HomeFront Strong (HFS), an evidence-based intervention for military and veteran spouses/partners, and their children. This project was guided by three Aims: 1. Develop and field test an HFS mobile website; 2. Train community providers to disseminate HFS at their community sites; and 3. Evaluate the mental health outcomes of group vs. web-based HFS in a sample of 321 military and veteran spouses/partners. In Aim 1, the HFS mobile website was developed in Year 1 and piloted in Year 2, then remained fully operational through the project. The website's security and reliability provided a major contribution, including during the pandemic when we could offer the online curriculum while in-person groups could not be held. Through Aim 2, we trained 107 community providers in military family resilience and the HFS intervention, with 12 providers receiving intensive training, supervision, and coaching in the model. Providers who attended the 2-day training showed statistically significant pre-to-post improvements on all HFS skills and knowledge items, as well as great satisfaction with the training. Providers who became HFS group facilitators achieved high fidelity to the HFS model and had statistically significant gains in HFS skills and knowledge. These results reflect the quality and effectiveness of the HFS training program and its utility for training clinicians to work effectively with military spouses and families. Pursuant to Aim 3, participant recruitment was a primary focus while enrollment was open. The pandemic led to the suspension of all in-person research activities, after which we used virtual methods of outreach and recruitment. One of our highest enrollment periods occurred during the pandemic, evidence that military families need mental health resources during times of stress and challenge, and that web-based programs fill a critical gap in services. Overall, 319 participants enrolled, with 277 completing assessment procedures and allocations to condition (90 HFS group; 187 web-based HFS). On the post-program survey, 97% of respondents said they would recommend HFS to others, and analyses showed statistically significant improvements on all HFS skills and knowledge items. Pre-post t-test analyses in the sample of all participants who submitted the post-program survey showed statistically significant improvements in individual outcome measure means for depression, anxiety, stress, life satisfaction, and optimism. Analyses of group participants' pre and 3-month interviews indicated they described their deployment/military experiences in significantly more positive ways after participating in HFS. In longitudinal analyses using a 4-timepoint, 10-outcome model for participants whose study cycles ended before pandemic lockdowns in March 2020, our initial analyses indicate that group participants did not show statistically significant improvement. However, at baseline they tended to have greater life burdens than web-based participants (e.g., higher perceived stress, greater chaos at home), which may have limited the potential for sustained gains from an 8-week program. Web-based intervention participants did show significant time-averaged improvement in depression, anxiety, stress, and life satisfaction. More research is needed for military spouse/family interventions, including into determining what types of programs might be most helpful for whom, with consideration for individuals' characteristics and life circumstances.

15. SUBJECT TERMS

Military spouses; Veteran spouses; Resilience; Psychology health intervention; Mental health

16. SECURITY CLASSIFICATION OF:**a. REPORT**

Unclassified

b. ABSTRACT

Unclassified

c. THIS PAGE

Unclassified

**17. LIMITATION
OF ABSTRACT**

Unclassified

**18. NUMBER
OF PAGES**

68

**19a. NAME OF RESPONSIBLE
PERSON**
USAMRDC**19b. TELEPHONE NUMBER**
(include area code)

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

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1. INTRODUCTION:

This project aimed to improve the psychological health and well-being of military and veteran families residing in civilian communities by disseminating and evaluating HomeFront Strong (HFS), an evidence-based resiliency intervention for military and veteran spouses/partners. The project was guided by three Aims: 1) Develop and field test an HFS mobile website; 2) Train community providers to disseminate HomeFront Strong at their community sites; 3) Evaluate the mental health outcomes of group vs. web-based HFS in a sample of 321 military and veteran spouses/partners. The project helped build capacity in local communities to offer HFS, provided program evaluation data to further establish the effectiveness of HFS, and generated feasibility data to develop a strategic plan for large-scale implementation of HFS.

2. KEYWORDS:

Military families; Veteran families; Military spouses; Veteran spouses; Resilience; Mental health; Psychological health intervention; Community capacity building; Dissemination; Implementation science

3. ACCOMPLISHMENTS:

3.1. What were the major goals of the project?

- 1) Develop and field test a mobile website of HFS program content
- 2) Train community providers to disseminate HomeFront Strong at their community sites
- 3) Evaluate outcomes of group vs. web-based HFS in a sample of 321 military and veteran spouses/partners

3.2. What was accomplished under these goals?

3.2.1. Goal 1: Develop and field test a mobile website of HFS program content

i) Major activities

In collaboration with the Center for Health Communications Research (CHCR) at University of Michigan, two products were developed in Year 1: 1) the HFS Administrative Console and 2) the HFS mobile website. The Administrative Console is a secure site that allows our staff to manage participant enrollment into each of the two HFS conditions (Group versus Web); to stagger the delivery of web-based content and homework reminders; and to track the timing of the multi-wave, multi-method evaluation protocol. The HFS mobile website serves as the web-based condition for HFS participants, and includes all HFS content and program activities on a website that is also conducive to mobile delivery. Please see the Annual Report from Year 1 providing a detailed description and sample screenshots from each of these products. The Administrative Console and HFS website were piloted successfully in Year 2.

In Years 3–7, the Administrative Console was utilized to track participant enrollment into HFS; to automate the staggered delivery of web content to participants (e.g., Session 1 content was delivered on Day 1; Session 2 content was delivered on Day 8; Session 3 content was delivered on Day 15; and so on through Session 8); and to track the timing for follow-up evaluations with participants as they completed the program (e.g., Post-HFS, 3-month, and 6-month). In Year 6,

we worked with our technical partners at CHCR to implement an updated plan for long-term hosting and maintenance of the site. CHCR set up a new managed server and updated the code libraries and related tools for the technical platform to ensure continued secure and reliable site operations. At the end of Year 7, we worked with CHCR to safely archive the study data and back up the site code, then shut down the production server while retaining the development site. The process used will enable us to quickly resurrect the HFS website for future projects by configuring a new server and restoring the backup code. We arranged to continue hosting the password-protected demonstration site in a cost-effective manner so potential partners and funders in the future will be able to review the site and its online curriculum content.

The HFS website was actively used by participants in the web-based HFS condition and as a supplement by HFS group participants. Participants in both study conditions ($N = 277$) received access to the site (90 in the group condition; 187 in the web-based condition). Of the 277 participants, 237 (86%) created a user account and viewed site content at least once. This includes 94% of participants in the web-based condition ($N = 176$ of 187) and 68% of those in the group condition ($N = 61$ of 90).

To facilitate retrieval and evaluation of website usage data, we worked with our partners at CHCR to refine the data download files and create a secure online method through which we could obtain the website usage paradata from the site directly (rather than requesting that CHCR staff retrieve the data for us each time). This innovation improved the process of retrieving paradata, which affected both the regular review of website usage and the iterative development of procedures for converting the raw paradata into content-dosage variables that could be used for subsequent analyses at the discretion of the statistician. For further details about website paradata processes, see previously submitted annual reports.

ii) Specific objectives

The primary activities of Aim 1 were completed in Years 1 and 2, resulting in the pilot-tested and fully operational HFS Administrative Console and HFS mobile website. Consistent with the Scope of Work, there were two objectives and related activities that continued throughout the study:

- **Participant usage of HFS website**
 - Provide participants access to the HFS website via the Administrative Console.
 - For enrolled participants, activate website and push notification system for homework reminders.
 - Monitor site for any implementation issues and modify as needed.
- **Retrieve and evaluate usage data after completion of program cycles**
 - Retrieve usage data from the secure site at timed intervals related to the group cohort or individuals' completion of the program.
 - Collect paradata from site usage (e.g., how many clicks or time on page translates to session completion) and transform to SPSS variables for analyses.

iii) Significant results or key outcomes

The reliable functionality of the HFS website was a major contribution throughout the project, allowing participants to choose the method of program delivery best suited for their life and family circumstances (in person with a weekly group or online individually when convenient).

An unanticipated benefit further arose during the pandemic, when the website enabled us to continue enrolling and supporting military spouses and their families by offering the online resilience curriculum while state-mandated lockdowns and institutional restrictions on in-person research activities forced us to end the in-person group condition.

Participants reported positive feedback about use of the website, with three particular features standing out: 1) the automatic notification system that provides reminders about the web-based program (e.g., *“They were helpful in reminding me that I had to start sessions and that new sessions were available, which I found myself looking forward to.”* *“These reminders were extremely helpful for me. I have a busy schedule, so it was nice to be notified.”* *“They were so helpful! If I do not write something down, I will forget to do it. The text and email reminders brought the program and tasks back to the forefront of my mind.”*); 2) the ability for participants to engage with program content at convenient times for their schedule (e.g., *“Having the online participation helped tremendously with being a busy military spouse.”* *“This is extremely important since I do work full-time outside of the home and raise a child.”* *“I mainly used this tool at night when I had free time, it made me think more in depth looking at the entire picture.”*); and 3) the ease of using the website (e.g., *“I was able to complete all the sessions on the website with ease and no issues.”* *“Easy to do anywhere.”* *“I like that I could go back and review the sessions (which I did).”*).

Review of paradata from website usage indicates that participants in the web-based condition spent more time on the website and viewed more session pages than did participants in the group condition. For example, 71% of participants in the web-based condition ($N = 132$ of 187) spent at least some time on the website for each of the 8 sessions. However, only 30% of group participants ($N = 27$ of 90) visited the site past Session 2. Participants interacted with the site through reading the curricular material, listening to audio content such as guided imagery and progressive muscle relaxation, and engaging with content by typing responses to exercises including stress check-ins, gratitude journal entries, and fill-in-the-blank questions. (For privacy reasons, the site was designed such that HFS staff cannot see what participants typed, only that click events took place on those pages.) Group participants had additional opportunities to engage in activities through the weekly facilitated groups and the printed program workbook, which may be related to their lower use of the website.

iv) Other achievements

Nothing to report.

v) Stated goals not met

All goals related to the development and field-testing of the Administrative Console and HFS mobile website were met. The products created during this project will be easy for our team to re-implement for any future iterations of the HFS program.

3.2.2. Goal 2: Train community providers to disseminate HomeFront Strong at their community sites

i) Major activities

To train community providers and disseminate HFS, we established and supported a total of 9 community sites: Easterseals Michigan (Center Line, Southfield, Grand Rapids, Flint, Pontiac), VFW National Home (Eaton Rapids), a private practitioner (Ann Arbor), Community Mental Health Authority of Clinton, Eaton, and Ingham Counties (Lansing), and St. Clair County Community Mental Health (Port Huron). Under this award, 107 community providers completed the 2-day HFS training, which was made available for each site to any provider who could attend both days. When possible, training providers in addition to the anticipated facilitators for a site's first group proved beneficial for meeting our project aims. HFS training helps educate mental health providers about military culture, the struggles and strengths of military-connected families, and how to work effectively with this population. In addition, training multiple providers at a site helped maintain capacity to offer HFS groups in the event of staff changes at the site.

Our model for program dissemination was as follows:

1. Meeting was held with potential partner agency to explain the study and discuss parameters of implementation.
2. MOU was negotiated and signed between University of Michigan and partner agency.
3. 2-day training was held with any providers at the partner agency interested in the HFS model.
 - Evaluation point: Pre/post training survey of all trainees
 - If Basic condition, two community providers were selected to lead the HFS group. If Enhanced condition, one community provider was selected to co-lead the group with HFS staff. Community provider(s) were selected in consultation with HFS staff and must have attended the 2-day training, been licensed by the state as a mental health provider, been covered under liability insurance, had a vested interest in military/veteran families, and committed to attending all sessions of the group.
4. Community provider completed University of Michigan IRB course (PEERRS).
5. ½ day focal training with community provider and HFS staff was held ~1 week prior to the start of a new group, with the focus on planning for the first session.
6. 8-week HFS group was launched at the community site.
7. During the group cycle, the community provider and HFS staff held weekly 90-minute coaching calls to review fidelity of the previous session, troubleshoot about specific issues for participants, and plan the next session. Of note, the HFS staff member leading the coaching calls watched a video of the session prior to the coaching call and provided personalized feedback to the group facilitators.
 - Evaluation point: After each session, the community provider completed a fidelity checklist to track completion of each of the key components for the session, as did the HFS staff co-leading the group. An HFS staff member external to the group also watched a video of the session and completed the fidelity checklist for comparison.
 - Evaluation point: After completion of the group cycle, the community provider completed a survey and an interview with someone from our research team

(independent of the coaching or training team) to evaluate the implementation process.

Note that beginning in mid-March 2020 (Year 6, Quarter 3), due to the pandemic, our team moved to work-from-home status and stayed connected with community partners virtually to provide support and regular program updates. As restrictions on human subjects research continued, we discussed with our partners the limited options for resuming in-person HFS trainings and community groups. We determined it was not possible to safely restart in-person activities within the designated timeline remaining for the project. We continued providing information and assistance to the sites when opportunities arose during the remainder of the project.

ii) Specific objectives

Consistent with the proposed Scope of Work for this Goal, the objectives listed below were a focus during this grant.

- **Engage community partners**
 - We supported partnerships with 9 community sites, as noted above: Easterseals (5 sites), the VFW National Home, county-level community mental health agencies (2 sites), and a private practitioner.
 - To recruit and engage community sites, we hosted and attended outreach events with other community agencies and providers, focusing on geographical areas where we identified a number of potential participants. We also built relationships over time through regular contacts with partners and potential partners (e.g., more than 350 interactions through meetings, emails, and calls).
 - See previous annual reports for details about partner engagement activities.
- **Conduct HFS training with community partners**
 - As mentioned above, HFS training occurred across several levels. Providers first attended a 2-day HFS training workshop, to which community sites could elect to send any of their staff members, not just the staff expected to facilitate HFS groups. About 1 to 2 weeks before a group launched, the providers planning to lead the group participated in a ½ day focal training to revisit the curriculum for the first session, review group participants' pre-intervention assessments, and plan logistics of the group. A final training area centered on the weekly coaching calls held with group leaders after each HFS session to review the fidelity of the session and plan for the next one.
 - See annual reports for details about HFS training activities, including training of 107 providers, 12 group facilitators, and 48 child team members for the children's program, and provision of 10 two-day workshops, 14 half-day focal trainings, and more than 110 coaching calls.
- **Monitor fidelity of HFS implementation process with community providers**
 - Under this project, 14 groups took place at community sites, led or co-led by 12 community facilitators. To evaluate the facilitators' training and implementation

experiences, we fielded post-group surveys and conducted post-group interviews with providers. For each of the 8-week group cycles, weekly fidelity checklists were also completed by group facilitators and an HFS staff member who had been trained in the HFS curriculum.

- During the initial pause on in-person activity due to the pandemic, our team worked to refine and standardize elements of the facilitator coaching. After systematically reviewing session tapes and internal notes from groups conducted over the past several years, we developed standardized coaching notes for each session of HFS. The new formalized coaching notes highlight the clinical skills and evidence-based foundation of HFS and set clear expectations for facilitators in each session, which will be useful for future iterations of the HFS program.

iii) Significant results or key outcomes

A total of 107 mental health providers were trained in military family resilience and the HFS model through this project, substantially increasing the number of community mental health providers in Michigan trained in interventions for military and veteran families. The HFS intervention has been offered through 14 in-person groups at 7 community sites throughout Michigan. This work also increased the size of our dataset for evaluating the implementation of HFS and assessing training outcomes and fidelity of the training model.

Evaluation of training and dissemination at community sites occurred in the following three ways: (1) pre- and post-training surveys, (2) fidelity checklists, and (3) post-group survey and interview.

1. Pre- and post-training surveys

Pre- and post-training surveys were completed by the community providers ($N = 107$) who attended 2-day HFS trainings during this project. Community providers universally reported high levels of satisfaction with the training. We received post-training surveys from 98% of the providers trained. Percentages below indicate those who said they agreed or strongly agreed with the following statements:

- I would recommend this training to other colleagues: 100% ($N = 105$)
- I am satisfied with the materials and ideas presented in the training: 100% ($N = 105$)
- My clients will benefit from my use of the materials: 98% ($N = 101$ of 103)
- This training included effective practical suggestions that give me confidence in using the materials: 97% ($N = 102$ of 105)
- I can find a way to make these materials a regular and sustained part of my work: 96% ($N = 99$ of 103)
- This training will be helpful in my practice with military/veteran populations: 95% ($N = 99$ of 104)

Attendees trained also commented on the quality and usefulness of the HFS training:

- “The HomeFront Strong training exceeded my expectations! I advanced my knowledge of military/veteran culture, the unique challenges that this population faces, and gained practical and highly transferrable clinical skills to be used with this population as well as many other populations. Thank you so much for an engaging and helpful training!”

- “Thank you for this training. I thought it was extremely well done and engaging. I believe this informed a lot of [agency] staff about working with Veterans and military members, and for that I am extremely grateful!”
- “Well organized. Gave good examples of unique military needs.”
- “I have a better understanding of military/veteran culture and how to connect with them on a deeper level. I learned/refreshed skills to utilize with all clients.”
- “Practical specific methods, information, and tools to utilize in a group were very helpful.”
- “This was honestly one of the top 5 trainings I’ve been to in 19 years as a social worker.”

Changes in providers’ knowledge and skills after training. We analyzed pre and post survey data to determine impact of the training on providers’ knowledge and skills. Community providers indicated how much they agreed with 24 specific statements before and after the training, using a 5-point scale ranging from strongly disagree = 1 to strongly agree = 5. As displayed in Table 1, results of paired-samples *t*-tests showed that mean scores increased on each item at statistically significant levels, indicating that providers felt they gained skills and knowledge post-training in comparison to pre-training. Most notably, provider knowledge of military populations and culture improved greatly. Six findings to highlight include:

- I know how to help participants discover their own story about military/veteran life: mean score increased from 3.2 (sd = 1.0) to 4.2 (sd = 0.6); $t(95) = -11.421, p < .001$ ($N = 96$)
- I understand military culture: mean score increased from 3.5 (sd = 1.0) to 4.2 (sd = 0.6); $t(99) = -8.199, p < .001$ ($N = 100$)
- I understand the unique needs of military and veteran spouses/partners: mean score increased from 3.5 (sd = 1.0) to 4.2 (sd = 0.5); $t(99) = -7.705, p < .001$ ($N = 100$)
- I can connect with military/veteran spouses and partners: mean score increased from 3.8 (sd = 0.9) to 4.2 (sd = 0.6); $t(98) = -5.387, p < .001$ ($N = 99$)
- I can teach the principles of HomeFront Strong: mean score increased from 2.6 (sd = 1.2) to 4.2 (sd = 0.7); $t(96) = -11.971, p < .001$ ($N = 97$)
- I can teach strategies for resilience: mean score increased from 3.7 (sd = 1.1) to 4.5 (sd = 0.5); $t(98) = -7.739, p < .001$ ($N = 99$)

Table 1. Providers' Perceived Changes in Knowledge and Skill: Pre-Training to Post-Training Surveys

Content/Skill	Before HFS Training (N = 102) ¹	After HFS Training (N = 102) ¹	<i>t</i>	<i>p</i>
	Mean (SD)	Mean (SD)		
Understand military culture	3.5 (1.0)	4.2 (0.6)	-8.199	.000
Understand the unique needs of military and veteran spouses/partners	3.5 (1.0)	4.2 (0.5)	-7.705	.000
Can connect with military/veteran spouses and partners	3.8 (0.9)	4.2 (0.6)	-5.387	.000
Can effectively lead a group	3.9 (0.9)	4.2 (0.8)	-4.151	.000
Can teach the principles of HomeFront Strong	2.6 (1.2)	4.2 (0.7)	-11.971	.000
Can teach strategies for resilience	3.7 (1.1)	4.5 (0.5)	-7.739	.000
Can teach strategies for practicing gratitude	3.9 (0.9)	4.5 (0.5)	-7.102	.000
Know how to help participants discover their own story about military/veteran life	3.2 (1.0)	4.2 (0.6)	-11.421	.000
Can teach about the physiology of stress	3.6 (1.0)	4.3 (0.6)	-7.488	.000
Can teach participants how to rate their stress levels	3.9 (1.0)	4.5 (0.5)	-7.392	.000
Can teach participants about the connections between thoughts, feelings, and actions	4.1 (0.9)	4.6 (0.5)	-6.583	.000
Can teach participants how to identify their negative thoughts	4.2 (0.8)	4.6 (0.5)	-6.165	.000
Can teach participants how to Dispute their negative thoughts	4.0 (1.0)	4.5 (0.6)	-6.410	.000
Can teach participants how to Discover other perspectives	4.0 (0.9)	4.5 (0.6)	-5.548	.000
Can teach participants how to use Distraction from negative thoughts	4.1 (0.8)	4.6 (0.5)	-6.728	.000
Can teach participants how to identify "good" friends	3.9 (0.8)	4.5 (0.5)	-6.922	.000
Can teach participants about different kinds of social support	4.0 (0.7)	4.4 (0.6)	-5.291	.000
Can teach participants strategies for allowing difficult emotions	3.9 (0.7)	4.4 (0.6)	-7.711	.000
Know how to teach diaphragmatic breathing	3.6 (1.1)	4.4 (0.7)	-7.862	.000
Know how to teach affirmations, mantras, and mottos	3.8 (1.0)	4.5 (0.6)	-8.266	.000
Know how to teach progressive muscle relaxation	3.8 (1.0)	4.3 (0.8)	-5.923	.000
Know how to teach visualization	3.7 (1.0)	4.2 (0.7)	-6.770	.000
Know how to teach guided imagery	3.6 (1.0)	4.2 (0.8)	-6.391	.000
Know how to teach mindfulness	3.8 (1.0)	4.4 (0.6)	-7.330	.000
¹ Of the 107 providers who completed HFS 2-day training, 102 responded on both pre and post surveys; <i>t</i> -test results for individual items based on range of <i>N</i> = 96 to <i>N</i> = 100 due to missing responses.				

2. Fidelity checklists

A subset ($N = 12$) of the trained providers became HFS group facilitators and led or co-led 1 to 2 groups with an HFS clinical staff member or with another trained provider from the community. Group facilitators received further training through ½-day focal trainings, hands-on experience leading groups, and weekly coaching calls to strengthen their grounding in the HFS model and presentation of the program content for study participants. After each group session, facilitators completed a fidelity checklist to indicate whether and how well they covered each of 11–14 key concepts matched to the manualized curriculum. A trained HFS staff member who did not co-lead the group also completed a fidelity checklist based on reviewing an audio or video-recording of the session. These checklists were then discussed in coaching calls to help guide facilitators in their implementation of HFS.

We received 100% of the fidelity checklists for HFS group sessions, for a total of 335 checklists (126 from community site facilitators, 95 from HFS staff co-leading groups, and 114 from HFS staff independently reviewing group recordings). Across 8 sessions per group, the facilitators and staff rated whether or not each of the key concepts were covered. For the 14 groups completed under this award, 98% of checklist responses rated session concepts as covered, with the remainder rated as partially covered (1.2%) or, in very few instances, not covered (0.3%). HFS staff and community facilitators were in agreement about whether key concepts were covered in each session 99% of the time. The fidelity checklists reflect the impact of the HFS training and coaching calls in helping facilitators achieve high levels of implementation fidelity and adherence to the HFS manual while providing support and resources to the participants who attended groups.

3. Post-group survey and interview

Community site facilitators completed the post-group survey and a brief phone interview for each group they led or co-led. The post-group survey included the same knowledge and skill questions asked on the pre- and post-training surveys. The post-group survey also contained satisfaction and feedback items about such topics as training, coaching calls, and facilitators' experiences with the HFS program and participants. The response rate was 100%, with 12 individual facilitators who completed a total of 16 post-group surveys and 16 interviews (i.e., 4 people who facilitated 2 groups each completed 2 sets of surveys and interviews).

Facilitators reported high levels of satisfaction with the HFS program. In the 16 post-group survey responses, 100% of facilitators agreed or strongly agreed that:

- The 2-day training was helpful in preparing them to lead a group.
- Coaching was important to implementing the group successfully.
- The HFS coach gave useful and constructive feedback during implementation.
- They enjoyed leading the HFS group.
- They would recommend the program to colleagues.

In an open-ended item on the survey, facilitators commented on whether they would recommend the HFS training to their colleagues.

- “I absolutely would. I think there is a large community out there that would benefit from participating in the group. So the more clinicians who are trained, the better.”
- “Yes, because it is very well organized, and it also felt meaningful and satisfying to be a part of.”
- “I think the experience is really great for clinicians who are interested in the military/veterans experience.”
- “Yes, it was excellent. I think it would provide a learning opportunity that a colleague in my agency would not otherwise receive. I was certainly helped by practice and honed my clinical skills in a new way.”
- “Yes. It provides a good overview of multiple therapeutic techniques in a way that is easy to grasp and teach. In addition, it allows for more exposure and knowledge of military culture.”

In post-group interviews, community site providers elaborated on the impact of the HFS training and coaching experience.

- “Knowing that I had all of the information, and that there were resources to turn to, and I was made aware of those resources ahead of time was helpful as I entered into the group. . . . I liked the manualization of it, but that it wasn’t completely manualized to the point that we couldn’t add our own spin on things. And then just getting more introduction and awareness to military life was also very interesting to me.”
- “I really enjoyed the structure and support and the concrete nature of the materials. I felt like I was given a great deal of guidance and exactly what to do, which really minimized confusion but also minimized stress and pressure. . . . [Coaching] was really positive. It was always interesting to hear the patterns that [the coach] picked up on that we don’t because we’re in the midst of running it. And blocks of good feedback, [the coach] would point out things that she thought were so great that we said, and we didn’t even remember that we said them.”
- “I think reflecting with someone who wasn’t in the room and hearing their perspective was good to get insight about participants, and then also thinking of ways we can better engage them. . . . When you reflect, I feel like you get more. When you’re in it, it’s each thing individually, and when you look back, it lets you look at the whole picture, like are there people that are clicking and others that aren’t? Is there anyone feeling left out? . . . It just allows you to process things you might have noticed with others.”

Facilitators also noted during interviews how they saw the program making a difference in the lives of the participants over the course of the group sessions.

- “At the start they [participants] were all very busy with different things and kids and other activities, but the use of the ‘what went well’ [exercise] was a really easy thing for them to grasp, and by the end they were naturally applying it. And it became more of a routine, as well as the thought circle and the overall idea of thoughts connecting to feelings which connected to actions, which was really powerful for them.”
- “Hearing them connecting on different levels and making play dates for their kids, who also hit it off really well. . . . overall the participants were super supportive of each other

when they had issues arise, and I could see those connections grow throughout the eight weeks. . . . [A participant] made a comment of how she feels HFS helped her daughter overall with social connections, and that was really exciting.”

- “One of our participants, who outwardly was very functional but her pre-testing and evaluation made it clear that she was really struggling emotionally with anxiety and depression, she took all of the grounding strategies seriously. And she came to a deep understanding of the connection between her thoughts and her feelings—one that she never had before. So we saw her really transform to being able to manage rising stress in the moment, to being able to communicate more effectively with others, and internally to process her own thinking and feelings and to make appropriate adjustments. I think that it’s going to be pivotal for her. . . . And the shift I think for her was life changing on a day-to-day basis.”
- “As we went along as the group progressed, the women seemed to bond more, and they started using the techniques that were offered. . . . The thought circles, switching out their thoughts and changing them to a more positive—there was one [participant] that felt like she was left out of the whole process of her husband being in the military. And so she switched it [her narrative] and she was happier about the new thoughts that she had regarding that, and she didn’t feel left out. She knew she had no control over his situation, but she did have control over her own life. And so she came out of it with a more positive outlook.”

Changes in facilitators’ knowledge and skills after co-leading their first HFS group. We analyzed pre-training and post-group survey data provided by group facilitators to help evaluate the impacts of training and coaching on their knowledge and skills after completing 1 HFS group cycle (8 weeks). On average, the time between the 2-day HFS training and the post-group survey was 8 months (range of 2 to 21 months). Paired *t*-tests revealed several areas of positive changes, with 17 of the 24 items returning statistically significant ($p < .05$) results (see Table 2).

The following highlights the clinical skills retained by group leaders:

- I know how to help participants discover their own story about military/veteran life: mean score increased from 3.3 (sd = 0.8) to 4.3 (sd = 0.5); $t(11) = -4.750, p < .001$ ($N = 12$)
- I understand military culture: mean score increased from 3.2 (sd = 1.0) to 3.9 (sd = 0.7); $t(11) = -3.000, p < .05$ ($N = 12$)
- I understand the unique needs of military and veteran spouses/partners: mean score increased from 3.1 (sd = 1.2) to 4.3 (sd = 0.5); $t(11) = -4.311, p < .005$ ($N = 12$)
- I can connect with military/veteran spouses and partners: mean score increased from 3.4 (sd = 1.2) to 4.3 (sd = 0.5); $t(11) = -3.079, p < .05$ ($N = 12$)
- I can teach the principles of HomeFront Strong: mean score increased from 2.3 (sd = 1.2) to 4.5 (sd = 0.5); $t(11) = -6.289, p < .001$ ($N = 12$)

Table 2. Facilitators' Perceived Changes in Knowledge and Skill: Pre-Training to Post-Group Surveys

Content/Skill	Before HFS Training (N = 12) ¹	After HFS Group (N = 12) ¹	<i>t</i>	<i>p</i>
	Mean (SD)	Mean (SD)		
Understand military culture	3.2 (1.0)	3.9 (0.7)	-3.000	.012
Understand the unique needs of military and veteran spouses/partners	3.1 (1.2)	4.3 (0.5)	-4.311	.001
Can connect with military/veteran spouses and partners	3.4 (1.2)	4.3 (0.5)	-3.079	.010
Can effectively lead a group	4.0 (0.6)	4.5 (0.5)	-3.317	.007
Can teach the principles of HomeFront Strong	2.3 (1.2)	4.5 (0.5)	-6.289	.000
Can teach strategies for resilience	4.1 (0.8)	4.7 (0.5)	-2.244	.046
Can teach strategies for practicing gratitude	4.3 (0.8)	4.7 (0.5)	-1.820	.096
Know how to help participants discover their own story about military/veteran life	3.3 (0.8)	4.3 (0.5)	-4.750	.001
Can teach about the physiology of stress	4.1 (0.8)	4.6 (0.5)	-2.569	.026
Can teach participants how to rate their stress levels	4.3 (0.5)	4.4 (1.2)	-0.518	.615
Can teach participants about the connections between thoughts, feelings, and actions	4.3 (0.5)	4.7 (0.5)	-2.159	.054
Can teach participants how to identify their negative thoughts	4.3 (0.5)	4.7 (0.5)	-1.773	.104
Can teach participants how to Dispute their negative thoughts	4.2 (0.6)	4.7 (0.5)	-2.631	.025
Can teach participants how to Discover other perspectives	4.3 (0.5)	4.7 (0.5)	-2.159	.054
Can teach participants how to use Distraction from negative thoughts	4.3 (0.5)	4.8 (0.5)	-2.803	.017
Can teach participants how to identify "good" friends	4.0 (0.7)	4.8 (0.5)	-3.000	.012
Can teach participants about different kinds of social support	4.3 (0.5)	4.8 (0.5)	-2.803	.017
Can teach participants strategies for allowing difficult emotions	4.0 (0.6)	4.5 (0.5)	-3.317	.007
Know how to teach diaphragmatic breathing	3.6 (1.2)	4.7 (0.5)	-2.797	.019
Know how to teach affirmations, mantras, and mottos	4.0 (0.7)	4.7 (0.5)	-2.345	.039
Know how to teach progressive muscle relaxation	4.0 (1.0)	4.7 (0.5)	-2.345	.039
Know how to teach visualization	3.9 (0.8)	4.4 (0.5)	-1.732	.111
Know how to teach guided imagery	4.0 (0.9)	4.4 (0.5)	-1.449	.175
Know how to teach mindfulness	4.0 (0.7)	4.8 (0.5)	-3.000	.012

¹ Pre-training and post-group surveys received from 12 facilitators; *t*-test results based on *N* = 11 for 2 items due to missing responses.

In summary, community providers who attended the 2-day training showed statistically significant improvements on all skills and knowledge items measured, as well as great satisfaction with the training. Providers who became HFS group facilitators achieved high fidelity to the HFS curriculum and had statistically significant gains in HFS-specific skills and knowledge, based on *t*-tests of pre-training and post-group self-ratings. Facilitators also reported feelings of purpose and enjoyment related to leading groups. These results reflect the quality and effectiveness of the HFS training program and its utility for increasing the availability of well-trained clinicians who developed a better understanding of military culture and learned new skills to help them work effectively with military spouses and families.

iv) Other achievements

Nothing to report.

v) Stated goals not met

Overall, the goals of this Aim were met. More than 100 community providers were trained in HomeFront Strong and the intervention was delivered at community sites as planned. We also completed each of our objectives, which included engaging community partners, conducting HFS training with community partners, and monitoring fidelity of the HFS implementation process. We had hoped to train more providers in the model, unfortunately the pandemic led to a cancellation of a large, planned training that was not rescheduled due to the timeline of the grant and ending of participant recruitment.

3.2.3. Goal 3: Evaluate outcomes of group vs. web-based HFS in a sample of 321 military and veteran spouses/partners

i) Major activities

Throughout the study enrollment window (early Year 3 to early Year 7), activities for Goal 3 took place with a diverse array of outreach strategies, steady recruitment of participants into the study, and participants then self-selecting into either 1) the in-person group condition or 2) the web-based condition. This quasi-experimental design with self-selection into intervention condition and the option of a web-based intervention meant that the study could safely continue even through the pandemic and shut-down orders because all activity could be done virtually without direct in-person contact.

Our team developed a strategic plan for outreach and recruitment that included partner engagement (e.g., Michigan National Guard, Michigan Veterans Affairs Agency, Regional Veteran Community Action Teams, Star Behavioral Health Providers, Ann Arbor VA, and Blue Star Families) and direct recruitment of participants at military and veteran-focused events (Yellow Ribbon events, NG Family Programs Conference, Family Readiness Groups, VA events, community-led veteran events, social media). We carried out a community mapping strategy for cities identified as locations for imminent groups, and we canvassed those areas with program and recruitment information. Beginning in Year 6, Quarters 3 and 4, COVID-19 restrictions required us to end our usual in-person outreach, and we shifted to virtual attendance at outreach events, greater use of social media, and more electronic contacts with partners.

We have a Memorandum of Understanding with the Michigan National Guard (MING) to provide assistance in direct recruitment of National Guard families into the program. Through this collaboration, we utilized a number of strategies to share information about the HFS program with military families. For example, through the direction of the Michigan Army National Guard Chief of Staff (MING CoS) and our active participation on the Community Health Promotion Council, our HFS program brochure was mailed directly to more than 8,000 Michigan Army National Guard families and nearly 1,000 Michigan Air National Guard families. Program materials were further shared with service members through the MING electronic bulletin board and through our attendance at drill weekend briefings.

We also built connections with Marine Corps Reserve, Army Reserve, and Coast Guard units that enhanced our outreach and recruitment. For example, , at the invitation of Marine Corps Reserve command staff, we briefed service members about the program at the Marine Reserves medical stand-down in Lansing. We also held meetings with the commander of a Coast Guard Station to help him prepare for a command briefing on the program. Planned in-person events with these branches and components were hindered by the pandemic; however, electronic communication and sharing of program resources continued.

Our team also build a relationship with the Michigan Veterans Affairs Agency (MVAA) and its staff and leadership. We found great success working with the director and staff in building a coalition to bring services to military service members/veterans and their families. For example, we worked with MVAA leadership to coordinate a large-scale mailing campaign featuring the HFS brochure and a letter from the MVAA Director endorsing the program, with an anticipated reach of about 16,500 veterans in Michigan born after 9/11/1983 (a method used by MVAA to focus on veterans who may have served Post-9/11). Through conversations with many of the individuals who contacted us, it became clear that this form of outreach was useful in connecting with people who had never heard of our program despite it being operational for 8 years at that point.

When COVID-19 restrictions on in-person activities began in mid-March 2020, we quickly increased outreach through other virtual means. For example, we posted information about HFS on Facebook pages and Podio platforms of military-connected organizations and the state-wide Veteran Community Action Teams (VCATs). To connect with community providers, we reached out with individual messages to mental health providers with information about HFS as a resource for military families these providers serve. Members of the HFS team attended virtual outreach events and trainings to learn more about resources dedicated to supporting military and veteran families during the pandemic. Through our Facebook page, quarterly newsletter, and emails, we shared information with HFS participants and potential participants. We also conducted Facebook advertising campaigns to reach out to spouses/partners who might have been seeking a resiliency program they could complete at home.

See past annual reports for further details about recruitment efforts over time, which included 250+ events attended, 5,200+ emails sent, 900+ calls made, 7,900+ quarterly newsletter emails sent, 28,500+ flyer/brochure distributions, and Facebook advertising and posts with a reach of 82,000+.

ii) Specific objectives

Consistent with the proposed Scope of Work for this Goal, work on the following objectives were a focus during this project.

- **Partner outreach and engagement**

- We established and maintained partnerships with local and state-level military/veteran organizations. HFS staff members attended individual and group meetings (virtually after March 2020) to promote the HFS program and to share recruitment information.
- In Years 3–6, we established and updated a comprehensive community mapping of all resources (schools, pediatricians, libraries, media, public message boards,

etc.) for locations targeted for HFS groups. After the pandemic began, we expanded into identifying and sharing available virtual resources with partners and participants.

- Outreach activities targeted areas planned for group sites. When shutdown orders were given in March 2020, we pivoted to focus on virtual outreach activities, as described in previous reports.
- **Recruitment and enrollment of participants**
 - In Year 6, we worked closely with our Science Officer, Dr. Claudio Ortiz, to track recruitment goals and plan phasing of the study in areas of recruitment, intervention, and analyses. With an approved Statement of Work, we revised our final recruitment target to 321 (from 360).
 - Annual participant enrollment numbers are listed below. Figure 1 displays quarterly enrollment numbers. At 319 total enrollments, we came very close to meeting our goal.
 - Year 3: 100
 - Year 4: 52
 - Year 5: 83
 - Year 6: 77
 - Year 7: 7
 - **Final total: 319**

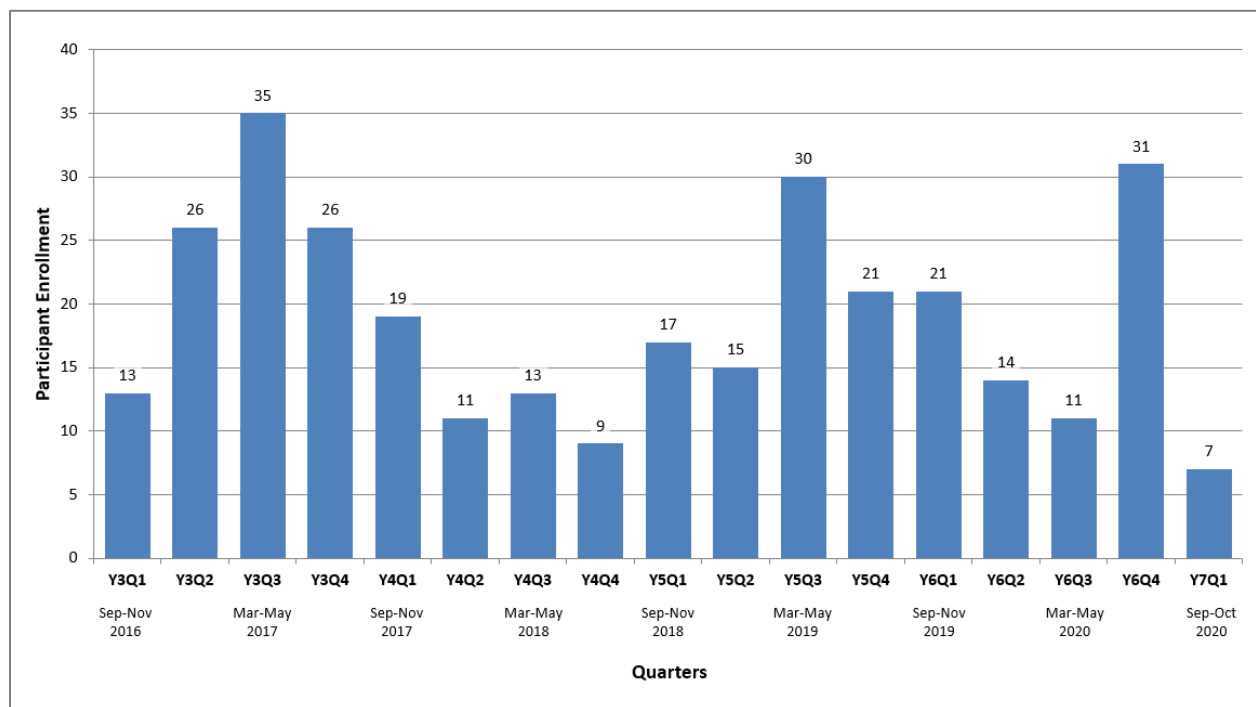


Figure 1. Participant enrollment, quarterly. Y3Q1 = Year 3, Quarter 1; Y3Q2 = Year 3, Quarter 2; etc. Enrollment period ended in early Oct. 2020.

- The pandemic and stay-at-home orders during the final 6–7 months of the recruitment period fortunately did not have a negative impact on enrollment. The consent and assessment procedures for this study took place virtually (by phone and online), so even with restrictions on in-person research activities, we were able to continue enrolling participants into the program, and they could begin the web-based program if they chose.
- See Appendix A, Cumulative Recruitment Flowchart, for an overview of enrollment and assessment numbers. A summary appears below.
 - ◆ Across the duration of the project, a total of 747 individuals indicated an interest in participating in HFS (e.g., by signing up at outreach events, contacting staff after learning about HFS through other people or venues). Of these, 67% (n=498) were screened for eligibility for the study.
 - ◆ Of those who were screened, 64% (n=319) were eligible and enrolled into the program. The remaining 36% (n=179) of screened individuals were ineligible (e.g., not a military or veteran spouse/partner, not Post-9/11 ere, lived out of state) or excluded for other reasons (e.g., no longer interested, unreachable or unresponsive).
 - ◆ Overall, self-selection into study conditions and self-withdrawal resulted in net totals of 90 participants in the HFS group condition and 187 in the HFS web-based condition.
 - ◆ The Cumulative Recruitment Flowchart shows time-based subsets within the sample that the statistician is considering how to handle in analyses due to the potential of a cohort effect related to the pandemic.
 - ❖ Of the net 90 participants in the group condition, 70 ended the study before 3/13/2020 (i.e., either completed the 6MFU survey or the window for its completion closed), and 20 were still moving through the study timeline.
 - ❖ Of the net 187 participants in the web-based condition, 100 ended the study before 3/13/2020, 40 were progressing through the study on that date, and 47 began the study after 3/13/2020.
- The graph in Appendix B shows projected and actual recruitment at the end of the project.
- **Conduct pre-, post-, 3-month, and 6-month follow-up assessments with participants**
 - Collection of assessment data ended in Year 7, Quarter 4, as the 6MFU assessment window ended for the final 11 participants in the web-based condition.
 - Pre assessment: A net total of 277 participants finished both parts of the pre-assessment protocol (survey and interview) and moved through the study phases in either the group (n=90) or web-based (n=187) condition.
 - Post assessment: Overall, 87% of participants (n=240 out of 277) submitted their post-HFS surveys. This includes 87% (n=78 out of 90) for the group condition and 87% (n=162 out of 187) for the web-based condition.
 - 3MFU assessment: Overall, 74% of participants (n=205 out of 277) completed both parts of the three-month follow-up. This includes 81% (n=73 out of 90) for the group condition and 71% (n=132 out of 187) for the web-based condition.

- 6MFU assessment: Overall, 77% of participants ($n=214$ out of 277) completed the six-month follow-up. This includes 84% ($n=76$ out of 90) for the group condition and 74% ($n=138$ out of 187) for the web-based condition.

iii) Significant results or key outcomes

Below we describe a series of results based on the sample of participants who engaged in the study. Some findings are preliminary given complications of the pandemic such as a potential cohort effect that will require further post-award analyses by the project statistician. Analyses include: 1) Demographics and Descriptives (Pre-HFS); 2) Mental Health Adjustment (Pre-HFS); 3) Satisfaction with HFS (Post-HFS); 4) Pre-Post Knowledge Changes; 5) Qualitative Analysis of Deployment/Military Narratives (Pre and 3MFU Interviews); 6) Pre-Post Mental Health Outcomes; 7) Longitudinal (Pre through 6MFU) Mental Health Outcomes for Group and Web-Based Participants Who Completed the Study Before the Pandemic Started; and 8) Longitudinal (Pre through 6MFU) Mental Health Outcomes for Web-Based Participants Who Began the Study After the Pandemic Started.

1) Demographics and Descriptives (Pre-HFS)

Participants who enrolled and were allocated to a study condition completed the pre-HFS survey, which included such questions as demographics, military background of the spouse/partner, and established measures of multiple mental health and wellness constructs. Participants self-selected into a study condition (HFS group or web-based). General demographics and military background are fairly comparable across the group and web-based conditions. However, differences of 10–15 percentage points occur in a few areas, e.g., more in the group condition have children (84.4% for group vs. 69.0% for web-based); more in the web-based condition work full-time (57.8% for web-based vs. 30.3% for group); and more in the web-based condition have spouses/partners who had never or not yet deployed at the time participants enrolled (24.9% for web-based vs. 12.5% for group). Please see Tables 3 and 4 below for further details from the pre-HFS survey, including the breakdown by group and web-based conditions ($N = 90$ and 187, respectively).

General demographics of the overall sample ($N = 277$) include:

- *Age*: mean of 33.1 years old ($SD = 7.5$, range = 18–64)
- *Gender*: majority are female (97.1%)
- *Ethnicity*: majority are Caucasian (84.8%)
- *Marital status*: majority are married (83.3%)
- *Children*: majority have children (74.0%)

Military background of their spouse or partner:

- *Current military status*: majority are currently serving in the military (58.3%); remainder are veterans (41.7%)
- *Deployment*: majority have deployed in the past but are not currently deployed (72.9%); of those, most have deployed 2 or more times (59.8%)

Table 3. General Demographics: Pre-Survey

Characteristics	Group (<i>N</i> = 90) ¹		Website (<i>N</i> = 187) ¹		Overall (<i>N</i> = 277) ¹	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Age (years)						
Mean	33.7 (SD = 6.9)		32.9 (SD = 7.9)		33.1 (SD = 7.5)	
Range	19–59		18–64		18–64	
Mode	29 (10.1%)		28 (8.6%)		28 (8.3%)	
Gender						
Female	90	100.0%	179	95.7%	269	97.1%
Male	0	0.0%	8	4.3%	8	2.9%
Ethnicity						
Caucasian	76	84.4%	158	84.9%	234	84.8%
African American	1	1.1%	11	5.9%	12	4.3%
Hispanic	4	4.4%	5	2.7%	9	3.3%
Asian American	0	0.0%	1	0.5%	1	0.4%
Native American	1	1.1%	0	0.0%	1	0.4%
Multi-ethnic	8	8.9%	11	5.9%	19	6.9%
Marital Status						
Married	81	90.0%	149	80.1%	230	83.3%
Unmarried, cohabitating	9	10.0%	24	12.9%	33	12.0%
Committed relationship, not cohabitating	0	0.0%	11	5.9%	11	4.0%
Divorced	0	0.0%	2	1.1%	2	0.7%
How Long in Committed Relationship with Current Spouse/Partner (years)						
Mean	9.3 (SD = 5.4)		8.3 (SD = 6.1)		8.6 (SD = 5.9)	
Range	1–26		0.5–45		0.5–45	
Mode	10 (12.4%)		5 (9.1%)		10 (9.8%)	
Children and Parenting						
Has children	76	84.4%	129	69.0%	205	74.0%
Number of children under 18 living in home (of those with children)						
Mean	2.5 (SD = 1.4)		2.1 (SD = 1.1)		2.2 (SD = 1.2)	
Range	0–7		0–6		0–7	
Mode	2 (41.3%)		2 (41.1%)		2 (41.2%)	
Stepparent (of those with children)	16	21.6%	37	28.7%	53	26.1%
Single parent (of those with children)	1	1.3%	6	4.7%	7	3.4%

¹ Due to missing responses, age based on *N* = 89 for group and *N* = 276 overall; ethnicity and marital status based on *N* = 186 for website and *N* = 276 overall; length of relationship based on *N* = 89 for group, *N* = 186 for website, and *N* = 275 overall; number of children in home and single parent based on *N* = 75 for group and *N* = 204 overall; stepparent based on *N* = 74 for group and *N* = 203 overall.

Table 3, continued. General Demographics: Pre-Survey

Characteristics	Group (<i>N</i> = 90) ¹		Website (<i>N</i> = 187) ¹		Overall (<i>N</i> = 277) ¹	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Region of Residence						
Southeastern Michigan	41	46.6%	82	43.9%	123	44.7%
Western Michigan	18	20.5%	57	30.5%	75	27.3%
Central Michigan	29	33.0%	33	17.6%	62	22.5%
Northern Lower Peninsula	0	0.0%	12	6.4%	12	4.4%
Upper Peninsula	0	0.0%	3	1.6%	3	1.1%
Residential Environment						
Urban	17	19.1%	29	15.6%	46	16.7%
Suburban	48	53.9%	92	49.5%	140	50.9%
Rural	24	27.0%	65	34.9%	89	32.4%
Highest Level of Education						
Some high school	1	1.1%	3	1.6%	4	1.4%
High school diploma or GED	5	5.6%	11	5.9%	16	5.8%
Some college	20	22.2%	46	24.6%	66	23.8%
Technical certificate or Associate's degree	13	14.4%	39	20.9%	52	18.8%
Bachelor's degree	37	41.1%	51	27.3%	88	31.8%
Graduate degree	14	15.6%	37	19.8%	51	18.4%
Employment (totals greater than 100% because participants could choose more than one response)						
Working full-time	27	30.3%	108	57.8%	135	48.9%
Working part-time	20	22.5%	25	13.4%	45	16.3%
Homemaker	35	39.3%	48	25.7%	83	30.1%
Student	18	20.2%	25	13.4%	43	15.6%
Unemployed, looking for work	7	7.9%	7	3.7%	14	5.1%
Unemployed, not looking for work	4	4.5%	7	3.7%	11	4.0%
On disability	1	1.1%	4	2.1%	5	1.8%
On maternity or paternity leave	2	2.2%	2	1.1%	4	1.4%
On illness or sick leave	1	1.1%	2	1.1%	3	1.1%
Other (e.g., caregiver for spouse)	10	11.2%	14	7.5%	24	8.7%
Annual Family Income						
Below \$20,000	6	6.7%	6	3.2%	12	4.4%
\$20,001 to \$30,000	9	10.1%	14	7.5%	23	8.4%
\$30,001 to \$40,000	7	7.9%	24	12.9%	31	11.3%
\$40,001 to \$50,000	12	13.5%	28	15.1%	40	14.5%
\$50,001 to \$75,000	23	25.8%	45	24.2%	68	24.7%
\$75,001 to \$100,000	15	16.9%	34	18.3%	49	17.8%
\$100,001 to \$125,000	12	13.5%	22	11.8%	34	12.4%
Over \$125,000	5	5.6%	13	7.0%	18	6.5%

¹ Due to missing responses, region of residence based on *N* = 88 for group and *N* = 275 overall; residential environment based on *N* = 89 for group, *N* = 186 for website, and *N* = 275 overall; employment based on *N* = 89 for group and *N* = 276 overall; income based on *N* = 89 for group, *N* = 186 for website, and *N* = 275 overall.

Table 4. Military Background of Spouse/Partner: Pre-Survey

Characteristics	Group (<i>N</i> = 90) ¹		Website (<i>N</i> = 187) ¹		Overall (<i>N</i> = 277) ¹	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Current Military Status						
Serving in the military	53	59.6%	108	57.8%	161	58.3%
Veteran	36	40.4%	79	42.2%	115	41.7%
Deployment						
Never or not yet deployed	11	12.5%	46	24.9%	57	20.9%
Currently deployed	4	4.5%	13	7.0%	17	6.2%
Past deployment	73	83.0%	126	68.1%	199	72.9%
Number completed (for those deployed in past but not currently deployed)						
1	35	47.9%	45	35.7%	80	40.2%
2	15	20.5%	36	28.6%	51	25.6%
3	11	15.1%	23	18.3%	34	17.1%
4 or more	12	16.4%	22	17.5%	34	17.1%
Military Branch (totals greater than 100% due to some having served in more than one)						
Active Duty: Army	40	44.9%	68	36.4%	108	39.1%
Active Duty: Navy	2	2.2%	12	6.4%	14	5.1%
Active Duty: Air Force	5	5.6%	17	9.1%	22	8.0%
Active Duty: Marines	7	7.9%	23	12.3%	30	10.9%
Active Duty: Coast Guard	0	0.0%	4	2.1%	4	1.4%
National Guard: Army	35	39.3%	77	41.2%	112	40.6%
National Guard: Air Force	8	9.0%	23	12.3%	31	11.2%
Reserve: Army	15	16.9%	16	8.6%	31	11.2%
Reserve: Navy	0	0.0%	5	2.7%	5	1.8%
Reserve: Air Force	1	1.1%	3	1.6%	4	1.4%
Reserve: Marines	0	0.0%	4	2.1%	4	1.4%
Reserve: Coast Guard	1	1.1%	1	0.5%	2	0.7%
¹ Due to missing responses, military status and military branch based on <i>N</i> = 89 for group and <i>N</i> = 276 overall; deployments based on <i>N</i> = 88 for group, <i>N</i> = 185 for website, and <i>N</i> = 273 overall.						

2) Mental Health Adjustment (Pre-HFS)

About 30% of participants at baseline reported symptoms of anxiety and 29% reported symptoms of depression at levels that would warrant clinical concern (i.e., meeting or exceeding cutoffs for symptoms of moderate anxiety or depression on the Generalized Anxiety Disorder Screener or the Patient Health Questionnaire, respectively). See Table 5 below for more information.

Table 5. Anxiety and Depression Symptoms: Pre-Survey

Characteristics	Group (N = 90)		Website (N = 187)		Overall (N = 277)	
	N	%	N	%	N	%
Anxiety Symptoms (based on GAD-7 ¹ score)						
Mean	8.2 (SD = 5.3)		6.8 (SD = 5.5)		7.2 (SD = 5.5)	
Range	0–21		0–21		0–21	
Mode	8 (11.1%)		0 (11.8%)		0 (9.7%)	
Interpretation (total possible = 21; scores of 10 or greater indicate clinically significant)						
No or minimal anxiety (scores 0–4)	26	28.9%	77	41.2%	103	37.2%
Mild anxiety (scores 5–9)	29	32.2%	61	32.6%	90	32.5%
Moderate anxiety (scores 10–14)	25	27.8%	28	15.0%	53	19.1%
Severe anxiety (scores 15–21)	10	11.1%	21	11.2%	31	11.2%
Depression Symptoms (based on PHQ-9 ² score)						
Mean	7.5 (SD = 5.8)		6.7 (SD = 5.9)		6.9 (SD = 5.8)	
Range	0–22		0–27		0–27	
Mode	3 (12.2%)		0 (11.2%)		0, 3 (10.1% each)	
Interpretation (total possible = 27; scores of 10 or greater indicate clinically significant)						
No or minimal depression (scores 0–4)	34	37.8%	91	48.7%	125	45.1%
Mild depression (scores 5–9)	28	31.1%	43	23.0%	71	25.6%
Moderate depression (scores 10–14)	16	17.8%	31	16.6%	47	17.0%
Moderately severe depression (scores 15–19)	6	6.7%	15	8.0%	21	7.6%
Severe depression (scores 20–27)	6	6.7%	7	3.7%	13	4.7%
Suicidality (numbers indicate “Yes” responses)						
Thought about committing suicide in the last 12 months	10	11.1%	16	8.6%	26	9.4%
Attempted suicide in the last 12 months	1	1.1%	1	0.5%	2	0.7%
Ever seriously thought about committing suicide	22	24.4%	38	20.3%	60	21.7%
Ever attempted suicide	12	13.3%	13	7.0%	25	9.0%

¹ Generalized Anxiety Disorder Screener (GAD-7): Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166, 1092–1097.

² Patient Health Questionnaire (PHQ-9): Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16, 606–613.

Suicide is also a primary variable of interest in the mental health domain. In this sample, 9% of participants indicated they had thoughts about committing suicide in the last 12 months (11% group, 9% web), with 1% of participants (1% group, 1% web) reporting attempts in the past year. When considering lifetime prevalence of suicidality, 22% reported ever seriously thinking about

suicide (24% group, 20% web), while 9% of the sample indicated at least one suicide attempt in their lifetime (13% group, 7% web).

3) Satisfaction with HFS (Post-HFS)

After completing the HFS group or the 8-week window for the web-based condition, participants were asked to complete a Post-HFS assessment. As noted earlier, 240 out of 277 participants (87%) completed the Post-HFS assessment (87% of the group condition; 87% of the web-based condition). Post-HFS survey responses indicate high levels of satisfaction with the program. For example, 93% of participants thought that HFS was helpful (99% of the group condition, 89% of the web-based condition). Also, 97% of participants would recommend HFS to other military/veteran spouses or partners (100% for the group condition; 96% for the web-based condition).

In open-ended questions on the Post-HFS survey, participants were asked to provide feedback about their experiences with HFS. Many found the program helpful due to the coping and self-care skills they acquired and incorporated into everyday life, which benefited themselves and their families:

- “There literally are not enough words to describe just how beneficial this program was for me and my family. I have learned tools that have impacted the way I feel, cope, manage, and react to stress. I have learned how to let other people in and share in experiences that can help me. I have learned that I am not alone. These are just a few things that have helped me and continue to impact my life every single day.”
- “It helped me to identify stressors in my life and create positive coping mechanisms to handle everyday stress and larger stressful events. I feel much calmer and better equipped to handle everything that is going on right now—to include deployment stress and pandemic stress.”
- “I am absolutely in love with the stress tracker and the gratitude and remembering to use a mantra to get myself through the day. I miss the class and wish I could do it every Monday forever!”
- “It caused me to do a lot more self-reflection than I would have done otherwise. HomeFront Strong made me pause and think about my husband’s perspective more than my own.”
- “I really, really enjoyed this program and felt it helped me to cope better with our transition out of the military. I also felt better able to care for myself as I was starting to care for my husband on a daily basis.”
- “The strategies that were introduced were helpful. I referenced them and practiced them often. Having the support of others, or the support of a program in which your needs and experiences are understood, makes all the difference in the world.”
- “Incredibly helpful to re-work the story I tell myself about my (military) service, my husband’s (military) service and our time after separating from the military in a more positive light. Super helpful to be with people with shared experiences.”

Group participants gave feedback about the strengths of the in-person HFS groups, and in particular, the opportunity to connect with others:

- “I enjoyed learning some new ‘coping techniques’ and meeting/connecting with other women/spouses in a similar situation. For me, the greatest benefit was the camaraderie I gained.”
- “I really enjoyed being around other spouses who could relate to what I have been going through. Having someone who knows exactly how I am feeling is very validating. It is frustrating because people try to understand but they really can’t understand unless they have walked in the shoes of a military spouse.”
- “It gave me tools to use to help with stress and everyday life. I feel less alone and hopefully helped me make friends. It’s an amazing program, every military spouse should get the opportunity to do a course like this.”
- “I loved having the chance to connect with others, and learn together as a group the different strategies HomeFront Strong provided.”
- “It offered me the opportunity to open up about our during- and post-military life and know I was not alone. It also offered me many invaluable tools to help me work through the many tough situations that come along with being the wife of a veteran as well as things I went through in the past as an Army wife.”
- “It really helped to not only build a community, but helped teach us how to be strong and supportive as well as taking care of ourselves.”
- “Being able to talk to someone who is or has gone through similar experiences is invaluable.”

Group participants whose children attended the parallel child program found it to be a great opportunity for their children to meet others in military families and to learn new skills:

- “It was fabulous. For as much benefit as I got out of the program, my daughter seemed to get so much more. Not only did she enjoy it to the point of begging me to go even when I wasn’t feeling well—we ended up going—but she was able to make friends with children who understood what her life was like. I can’t express how much having this meant to her and to our family.”
- “I feel it really gave me and my children amazing coping mechanisms and offered us a sense of military community close to home that we never had (especially my children) as a National Guard family.”
- “My daughter really loved the kids program and asks to go back even though it’s over.”
- “My kids loved it so much. They begged to go every week. They would practice their strategies and tell me about it. They never wanted to leave.”
- “I was very pleased! My children were happy and excited to attend and I knew I didn’t have to worry about them while they were with the wonderful ladies managing it. I also am pleased with their take-away.”
- “My kids learning the breathing technique has been a godsend! We use it a lot at home.”
- “THANK YOU! I have been trying to find ways of teaching my kids how they can control their stress, anxiety, etc. and the program gave all of us tools to do that.”

Web-based participants also shared feedback about the strengths of the HFS web-based program:

- “I really enjoyed the way each week was focused on [one] thing. I focused on each week’s task, and as the weeks went on, I felt much more at peace with my life. I have continued to use the techniques taught in moments of chaos to ground myself. The best week, for me, was the week about gratitude and writing in a journal. . . .I have found a lot of peace in just writing down my thoughts and emotions.”
- “I thought all of the HomeFront Strong curriculum was delivered in the appropriate way and the perfect amount. I appreciated that it was not too time consuming and it had good ideas. I loved that I could go through it in the comfort of my own home and I did not need to travel to a location.”
- “I believe it was helpful, both for my personal and professional life. It helped me personally to help manage my stress, especially during the trying times presented with changes during the pandemic. Professionally, I gained tools that I can share in my work with families at the school I work at.”
- “In my situation, I believe it helped put out potential fires before they had a chance to start because I had the tools to deal with them as they arised.”
- “I enjoyed everything about it but my favorite thing was the audios on Grounding Strategies at the end of each module. . . . I also liked the resources page on the site; probably the most condensed list of resources for veterans/military family, which I appreciate because it can be confusing to find resource lists through Google and such.”
- “It taught me about new ideas and methods that I didn’t know about, such as Progressive Muscle Relaxation and Visualization. Also, it was helpful in giving me tips/guidance on how to deal with difficult life situations and mindsets.”
- “I enjoyed being able to participate and it was nice to have something that was just for me as a spouse to grow myself and give me the opportunity for self-improvement.”
- “I really enjoy the content and feel like I gained things out of it. I’m still working on certain things, but I am glad I can go back and reference the materials when I’m in need.”

Web-based participants also shared suggestions for improving the web-based program:

- “It would be nice if there was also an online group component. I found the lessons were quick and needed some conversation for the topic to really sink in.”
- “I would like to see more on how to build community. I for one am an introvert and found that living on base away from my family was a very difficult time for me and I had a very hard time making myself reach out and make friends. Even though I knew it to be important.”
- “Possibly another person to talk to through email or the website. Someone that is also in the program or has completed the program that knows the same struggles.”
- “Possibly videos or group chats.”

4) Pre-Post Knowledge Changes

The Post-HFS assessment fielded at the end of the 8-week resilience program includes a set of questions that assess changes in knowledge and skills across the key topic areas covered in the HFS curriculum. Participants indicate how much they agree/disagree with 19 specific statements before and after the group, using a 5-point scale ranging from strongly disagree = 1 to strongly

agree = 5. We conducted analyses of the overall sample, electing to defer analyses between conditions until the statistician could conduct longitudinal analyses and consider potential cohort effects and other complexities related to the pandemic. As seen in Table 6, results of paired-samples *t*-tests showed that mean scores increased on each item, indicating that participants felt they had greater knowledge and skills in core areas after participating in HFS.

Table 6. Participants' Perceived Changes in Knowledge and Skill: Post Survey

Content/Skill	Before HFS (<i>N</i> = 240) ¹	After HFS (<i>N</i> = 240) ¹	<i>t</i>	<i>p</i>
	Mean (SD)	Mean (SD)		
Confidence in my ability to be resilient	3.4 (1.0)	4.3 (0.6)	−13.839	.000
Knew how to practice gratitude	3.6 (1.0)	4.5 (0.6)	−13.163	.000
Knew my own story about military/veteran life	3.8 (1.1)	4.3 (0.7)	−8.147	.000
Understood the physiology of stress	3.6 (1.0)	4.3 (0.6)	−11.968	.000
Knew how to rate my level of stress	3.0 (1.2)	4.4 (0.6)	−17.294	.000
Could identify how my thoughts, feelings, and actions were connected	3.3 (1.0)	4.3 (0.6)	−15.183	.000
Knew how to identify my negative thoughts	3.4 (1.0)	4.3 (0.6)	−12.268	.000
Knew how to Dispute my negative thoughts	2.8 (1.1)	4.2 (0.6)	−17.341	.000
Knew how to Discover other perspectives, different from my own negative thoughts	3.1 (1.1)	4.2 (0.6)	−15.350	.000
Knew how to Distract myself from negative thoughts	3.0 (1.2)	4.2 (0.6)	−15.419	.000
Knew how to identify “good” friends	3.8 (1.0)	4.4 (0.6)	−10.377	.000
Knew about different kinds of social support I need	3.1 (1.1)	4.4 (0.6)	−16.038	.000
Knew how to allow difficult emotions	3.0 (1.1)	4.2 (0.7)	−15.533	.000
Knew how to use diaphragmatic breathing	3.1 (1.3)	4.4 (0.6)	−13.647	.000
Knew how to use affirmations, mantras, and mottos	3.4 (1.1)	4.3 (0.7)	−13.425	.000
Knew how to use progressive muscle relaxation	2.9 (1.2)	4.3 (0.6)	−15.897	.000
Knew how to use visualization to help myself relax	3.1 (1.2)	4.3 (0.7)	−14.665	.000
Knew how to use imagery to help myself relax	3.0 (1.1)	4.2 (0.7)	−15.162	.000
Knew how to use mindfulness to help myself relax	3.0 (1.2)	4.3 (0.6)	−16.602	.000

¹ Post surveys received from 240 participants; *t*-test results based on range of *N* = 225 to *N* = 231 due to missing responses.

5) Qualitative Analysis of Deployment/Military Narratives (Pre and 3MFU Interviews)

The evaluation of HFS includes a multi-method approach to understand the experiences of military spouses and determine programmatic impact. One such tool was a semi-structured interview, administered both pre-program and at 3-month follow-up (3MFU), that elicits a narrative from the participants' perspectives of their internal representations of military life. A portion of the interview, adapted from the Working Model of the Child Interview (Rosenblum et al. 2008; Zeanah and Benoit 1995), asks the participant to **select five words or phrases that describe their experiences with deployment and military life**, then explain why they chose

each word or phrase. Coding and analysis of this data help reveal participants' perceptions and thought patterns regarding these experiences.

For the current sample, we replicated the qualitative coding methodology we used in an earlier pilot study of HFS (Kees, Nerenberg, Bachrach & Somers, 2015). We utilized the original codes and codebook from the pilot project with minor edits to the codes and scoring procedure. We made modifications to the coding process to make secure data capture easier and consensus discussions more feasible for the larger sample size of the current project. The adjusted process also factored in changes needed for pandemic work-from-home conditions.

The description for why a participant chose an adjective (e.g., "You said "Pride" described your experience with the military. Can you share why you chose pride?") served as the text to be coded. The final eight codes are listed below. Table 7 shows each code with examples excerpted from interviews conducted with participants under this award.

- Positive aspects about the deployment experience
- Feeling supported
- Feeling hope
- Learning something or growing from the experience
- Feeling strong or self-competent
- Feeling helpless
- Feeling overwhelmed
- Feeling unsupported

Table 7. Codebook for Thematic Analyses of Deployment/Military Narratives

Narrative Themes	Examples from Participants' Interviews
Positive aspects about the deployment experience	"I'm proud of me. I think being a wife of a veteran made me a stronger person. It made me so I speak up for myself a lot better. It's definitely taught me how to be a better advocate -- not just for him, but for me and the kids, too." "With everything that I've been experiencing with my husband being overseas, with the people that I've got to meet, with just interacting with people, we've done some... a couple of get-togethers with families, and there's just so much love around me and it's so great to have all of that love in my life."
Feeling supported	"Just because I feel like I've had so many text messages from military spouses.... I've gotten a lot of 'You can do this, it's okay.' And, just very out of the blue texts just mean a lot. It's very fitting for the military, there's a lot of family that just becomes your family overnight." "The [Branch] is truly a family ...my [Branch] friends, if I called them and I've known them for two months, they're still right there, or like there's always someone I can call or reach out to if I'm having an issue with anything...."

Narrative Themes	Examples from Participants' Interviews
Feeling hope	"I have hope. I can't give up. I mean, there's a lot of times we want to give up. A lot of times, we feel like we are giving up. But hope is ... On those hard days, that's what gets us through to the next. Hope is ... It's a big deal.... So, I hope for things." "But then you have the opportunity to travel, the opportunity to meet lots of different people, the opportunity to be involved in programs or studies like this, so it's worth it."
Learning something or growing from the experience	"I think that I've grown a lot as an individual, as a wife, as a mother a lot even just in the last year. And that has everything to do with our military experience and nothing to do with just another year of my life." "I'm happy because I can be proud and it's like, ...you learn how to cope with things, you learn how to transition better ..., and you learn how to be flexible. And so along with the bad you get good and you can be proud and happy in those moments."
Feeling strong or self-competent	"So, there is that sense of empowerment. During his AT ... we had some really great days where I would wake up, and even though it was rough we'd get a lot done. I had time to sit and connect with our daughters.... And at the end of the day, you're like, 'Wow. That was a good day.' And I did that by myself, and especially with kids." "It strengthens you because you just, you adapt to things. You just kind of do it. You figure out how to do things by yourself. ... It strengthens you and makes you a stronger person and a stronger parent and a stronger spouse."
Feeling helpless	"... he's uncertain of his surroundings or uncertain of what was going to happen, and just live every day not knowing, it's completely out of my control. It's absolutely nothing that I could do that could affect the outcome of whatever's going on in our life right now with this deployment of his time in the army. There's nothing I could do." "Sometimes, it feels like the Army is the wife, and I'm the other woman. If you can understand that, because when the Army says this, you do it. Then I don't have a say no matter how I feel. Yeah. It's just crazy. It's just never knowing."
Feeling overwhelmed	"Well, I suppose just having to both parents and having to... in addition to working and raising the children alone, taking care of the house alone, all of the house chores, everything from A to Z, just carrying that burden was a lot you know, and it was very stressful." "Because again, as I was dealing with all of that, his civilian, the civilian life that he's now trying [to] acclimate into while also raising our family and dealing with those struggles, sometimes it can be overwhelming trying to wear all those hats and do it with grace and positivity."

Narrative Themes	Examples from Participants' Interviews
Feeling unsupported	"And then you get out and it's like the whole world has gone by and you're like in a room with other women and you feel like you have nothing in common. You kind of feel isolated, so that kind of like adds to like the challenging factor." "I know a few other veterans or veteran spouses but I'm not very close with them and so I feel like a lot of people that don't have a veteran, or specifically a disabled veteran in their family, really can't understand what I'm going through. So, it can feel isolating because if you don't have somebody who has served that's close to you, you don't understand what the day to day is like."

For the current project, three study team members were trained in the coding definitions and process using the pilot data set of transcripts. Coders were tasked with determining the degree to which each of the codes were present or reflected in participants' narratives about each adjective, using a 3-point scale: not true (1), sometimes true (2), and very true (3). Before coding of the 144 transcripts (a pre and a 3MFU for each of 72 HFS group participants), a study team member who was not on the coding team blinded the ID and timepoint for each transcript and then randomized the order in which the transcripts would be coded. Then members of the coding team coded all transcripts independently, such that each transcript was separately coded by three team members. Codes were entered into a secure online Qualtrics form developed by the team, then downloaded into Microsoft Excel for processing and analyses. The coding team held regular meetings to discuss and reconcile discrepant coding, and the resulting consensus code was recorded as the value for the final dataset.

For this initial analysis, we focused only on group participants who completed the post-intervention qualitative survey ($N=72$). Review of data showed that 19% ($N = 14$ of 72) of the sample offered fewer than 5 words or phrases during an interview. They were not included in these preliminary analyses since such missing data would lead to inaccurate scoring, especially for the top-level positive and negative summation scores. For the remaining transcripts, we computed scores and unblinded the IDs and timepoints, then ran paired t -tests to determine whether there were significant changes in the scores, pre to 3MFU, representing participants' perceptions and attitudes toward deployment and military experiences.

As depicted in Table 8, paired samples t -tests comparing the mean positivity scores revealed that overall, participants in the analyzed subsample described their experiences in a significantly more positive way in the 3MFU interview compared to the pre-program interview. Table 8 shows the results of paired-samples t -tests of mean scores for each code, grouped by either positive or negative perceptions, from pre-program to 3 months post-program.

The most significant changes are outlined below:

- Overall positive scores (a summation of the 5 positive codes) increased from 33.4 (sd = 5.2) to 35.6 (sd = 6.5); $t(57) = -2.718$, $p < .01$ ($N = 58$).

- Descriptions of events, feelings, or relationships that developed from the deployment experience that participants found beneficial, joyful, and positive increased from 8.2 (sd = 1.9) to 9.4 (sd = 2.3); $t(57) = -4.364, p < .001 (N = 58)$.
- Descriptions of learning and growing from the deployment experience increased from 5.9 (sd = 1.1) to 6.5 (sd = 2.0); $t(57) = -2.892, p < .01 (N = 58)$.
- Descriptions of feeling strong or self-competent, believing in one's own strength and abilities, increased from 7.2 (sd = 2.0) to 8.0 (sd = 2.0); $t(57) = -2.295, p < .05 (N = 58)$.

These findings suggest that the HFS group had an impact on how participants think about and tell their story of military life and deployment. After the group, participants were more likely to share positive, optimistic thoughts about their military experiences. They were able to share a perspective of growth and learning, and recognized their own strength and self-competence through their experiences. We propose that the HFS intervention is critical to supporting spouses in meaning making and shifting negative attributions about military life into a more positive, and emotionally beneficial narrative. Given the well-established link between negative attributions and mental health, this finding is a critical piece in showing the positive impact of HFS. Military spouses in the HFS group changed the way they told their story about deployment and military life. This opens a portal for accessing and changing spouses' perceptions and subjective experiences, with the potential of impacting psychological health and ongoing resilience.

Table 8. Participants' Changes in Deployment and Military Narratives: Pre to 3MFU Interviews

Code	Before HFS (<i>N</i> = 58) ¹	After HFS (<i>N</i> = 58) ¹	<i>t</i>	<i>p</i>
	Mean (sd)	Mean (sd)		
Positive Codes				
Overall positive scores (summation of 5 codes below)	33.4 (5.2)	35.6 (6.5)	-2.718	.009
Positive aspects about the deployment experience	8.2 (1.9)	9.4 (2.3)	-4.364	.000
Learning something or growing from the experience	5.9 (1.1)	6.5 (2.0)	-2.892	.005
Feeling strong or self-competent	7.2 (2.0)	8.0 (2.0)	-2.295	.025
Feeling supported	6.5 (1.7)	6.7 (1.8)	-0.475	.637
Feeling hope	5.6 (0.9)	5.7 (1.1)	-0.988	.327
Negative Codes				
Overall negative scores (summation of 3 codes below)	20.4 (4.0)	20.1 (3.4)	0.578	.566
Feeling helpless	7.6 (2.2)	7.3 (1.7)	0.985	.329
Feeling overwhelmed	6.6 (2.0)	6.5 (1.5)	0.129	.898
Feeling unsupported	6.1 (1.5)	6.2 (1.5)	-0.245	.807
¹ The qualitative interview dataset includes 72 HFS group participants who completed both the pre and 3MFU interviews. However, 14 (19%) of those participants did not provide the full 5 words and phrases requested, thus were excluded from these preliminary analyses.				

6) Pre-Post Mental Health Outcomes

HFS assessments included standardized measures of depressive symptoms (PHQ-9) and anxiety (GAD-7), in addition to other measures of mental health, adjustment, and resilience such as optimism (LOTR) and satisfaction with life (SWLS). We conducted paired *t*-tests on the pre-HFS and post-HFS scores for 10 outcome measures. As seen in Table 9, results showed that mean scores decreased at statistically significant levels ($p < .001$) on measures of depression, anxiety, and perceived stress, and increased for life satisfaction and optimism ($p < .001$), which may be associated with participating in the HFS program. However, the context of the pandemic arising partway through data collection warrants consideration when interpreting results. For more extensive analyses of these variables using the pre-pandemic portion of the dataset, see the next subsection.

Table 9. Participants' Changes in Mental Health Symptoms: Pre to Post Survey

Characteristics	Before HFS (<i>N</i> = 240) ¹	After HFS (<i>N</i> = 240) ¹	<i>t</i>	<i>p</i>
	Mean (SD)	Mean (SD)		
Depression symptoms (based on PHQ-9 score)	6.9 (5.8)	5.7 (5.5)	3.735	.000
Anxiety symptoms (based on GAD-7 score)	7.0 (5.3)	5.5 (5.0)	4.809	.000
Perceived stress (based on PSS-10 score)	17.3 (7.2)	15.7 (7.0)	3.838	.000
PTSD symptoms (based on PCL score)	32.0 (14.8)	30.9 (14.2)	1.550	.122
Chaos at home (based on CHAOS score)	15.7 (8.2)	15.0 (8.3)	1.755	.080
Life satisfaction (based on SWLS score)	23.4 (6.9)	24.5 (6.7)	-3.718	.000
Life orientation, optimism (based on LOTR score)	14.4 (5.6)	15.3 (5.6)	-3.867	.000
Life engagement (based on LET score)	25.2 (4.6)	25.0 (4.5)	0.728	.467
Interpersonal support (based on ISEL score)	36.4 (7.6)	36.4 (7.0)	-0.164	.870
Dyadic adjustment (based on RDAS score)	49.5 (9.0)	48.5 (9.5)	2.466	.014
¹ Post surveys received from 240 participants; <i>t</i> -test results based on range of <i>N</i> = 228 to <i>N</i> = 240 due to missing responses on some items.				

7) Longitudinal (Pre through 6MFU) Mental Health Outcomes for Group and Web-Based Participants Who Completed the Study Before the Pandemic Started

The beginning of the pandemic partway through the study complicates data analyses since it could be difficult to reliably detect a cohort effect and determine its impact on interpretation of results. To account for a possible cohort effect, we categorized participants into three subsamples based on whether each participant's full study cycle (from consent to the close of the 6-month assessment window) ended before, was still open on, or began after 13 March 2020. We first

focused on longitudinal analyses with earliest subsample, those whose study participation ended before the pandemic led to lockdowns in Michigan.

Methodology and results from longitudinal analyses using data collected at the pre, post, 3MFU, and 6MFU timepoints for group and web participants who completed the study before 13 March 2020 are summarized below.

Methodology. For this set of analyses, our objectives were to summarize changes in outcomes in each intervention condition (web-based and group) during the six months post-intervention period. We compared various baseline characteristics between web-based and group conditions, which was of particular interest since participants were able to self-select into an intervention condition. We also assessed for the extent of missing data across the three follow-up time points, and used a multiple logistic regression model to identify baseline characteristics associated with missingness.

To fully characterize the changes in outcome associated with participating in each condition, we chose ten outcome measures to analyze. We first assessed pair-wise correlations of the ten outcome measures at baseline. For each outcome measure, we calculated change scores at each follow-up time as changes from baseline and summarized the means at each follow-up time by intervention condition; the scores are calculated so that positive values correspond to improvement, while negative values correspond to worsening in outcome. We then visualized cross-sectional means of each outcome measure and their change scores over time by intervention condition to assess the overall and between-condition patterns over time. For study objectives, we used mixed models with the change scores at all follow-up times as the response variable. The model included participants as random intercepts to account for within-person correlation of the repeatedly assessed outcomes. Predictors included assessment times in weeks since post-intervention and an indicator for web-based intervention, and the model was also minimally adjusted for baseline values of the outcome variable, which are usually highly predictive of changes in outcomes. Based on the model, we estimated time-averaged means by each intervention condition and between-conditions. To control for potentially increased erroneous conclusions from multiple hypotheses testing, we used the Bonferroni adjustment by determining p -values less than 0.005 as statistically significant.

For robustness of our findings, we conducted several alternate analyses. We obtained estimates after further adjusting for covariates associated with intervention condition as well as covariates associated with missingness. These were expected to provide estimates by each condition and between conditions averaged over all included covariates. We also repeated the adjusted analyses using time as the actual assessment time rather than the planned regularly spaced study assessment times; in these analyses, we excluded a small number of 6 months data that were assessed more than 9 months after post-intervention time. Finally, we also assessed for outcome trends (e.g., continued improvement) during post-intervention follow-up time and for differential trends by the intervention condition. This was done by adding an interaction term of time by an indicator for web-based intervention to each model and obtaining slope estimates by condition.

Results. A total of 170 participants were enrolled, participated in the intervention (70 selected group intervention and 100 selected web-based intervention), and either completed the 6-month study assessments prior to 13 March 2020 or their last allowed 6-month study assessment date

was before 13 March 2020. Fifteen participants (8.8%) were lost-to-follow-up for all assessments, 7 in group and 8 in web-based participants, with no difference found between groups ($p=.65$). At least one follow-up assessment was missing out of three study assessment times in 54 (31.8%) participants, with significantly higher missingness in web than group participants (39% vs. 21%, $p=.02$), and missingness was higher at 3 months than 6 months. Participants with higher education level were less likely ($OR=.68$, $p=0.01$) and full-time working participants ($OR=2.2$, $p=.047$) were more likely to have missing follow-up assessments.

Baseline Analyses. Of the ten outcome measures, depression, anxiety, and stress scores showed higher pair-wise correlation at baseline than other measures, and the pair-wise correlations ranged from $-.60$ to $.74$. Compared with participants who chose to participate in the web-based intervention, group intervention participants were less likely to be full-time working, more likely to have kids at home, have a higher number of minor kids at home and full-time kids at home (Table 10). At baseline, group intervention participants tended to have worse outcomes or greater health burden than those who selected the web-based intervention (Table 11). In particular, group participants, compared with web-based participants, had higher perceived stress levels as measured by PSS10 (19.2 vs. 16.1) and greater chaos at home as measured by CHAOS (17.5 vs. 14.4). Group intervention participants also were more likely to be currently in individual or group therapy than web-based intervention participants.

Table 10. Demographic Characteristics in Participants Who Completed the Study Before the Pandemic (3/13/2020) by Web vs. Group Intervention and in Total

Characteristics	Group (N = 70)	Website (N = 100)	Total (N = 170)	p-value [^]
Age in years, mean (SD)	33.7 (7.3)	33.0 (8.8)	33.3 (8.2)	.58
Male, n (%)	0 (0)	6 (6.0)	6 (3.5)	.04
Marital Status, n (%)				
Married	63 (90.0)	76 (76.8)	139 (82.3)	.04
Unmarried, cohabit	7 (10.0)	13 (13.1)	20 (11.8)	
Committed relationship	0 (0)	8 (8.1)	8 (4.7)	
Divorced/Separated/Single	0 (0)	2 (2.0)	2 (1.2)	
Race/Ethnicity, n (%)				
Black	1 (1.4)	10 (10.1)	11 (6.5)	.02
White	57 (81.4)	81 (81.8)	138 (81.7)	
Hispanic	7 (10.0)	2 (2.0)	9 (5.3)	
Other (multi-ethnic, Asian, Native Am)	5 (7.1)	6 (6.1)	11 (6.5)	
Education, n (%)				
High School or Less	4 (5.7)	8 (8.0)	12 (7.1)	.38
Some College	29 (41.4)	47 (47.0)	76 (44.7)	
Bachelor's	29 (41.4)	29 (29.0)	58 (34.1)	
Graduate Degree	8 (11.4)	16 (16.0)	24 (14.1)	
Employment, n (%)				
Full time	18 (25.7)	53 (53.0)	71 (41.8)	<.001
Part time	16 (22.9)	14 (14.0)	30 (17.7)	.14
Homemaker	29 (41.4)	29 (29.0)	58 (34.1)	.09
Unemployed	9 (12.9)	8 (8.0)	17 (10.0)	.30
Student	15 (21.4)	15 (15.0)	30 (17.7)	.28
Retire, on sick leave or disability	1 (1.4)	4 (4.0)	5 (2.9)	.33
Residential Environment				
Urban	11 (15.9)	17 (17.2)	28 (16.7)	.48
Suburban	41 (59.4)	50 (50.5)	91 (54.2)	
Rural	17 (24.6)	32 (32.3)	49 (29.2)	
Deployment Stage, n (%)				
Pre	10 (14.5)	21 (21.0)	31 (18.3)	.29
During	3 (4.4)	10 (10.0)	13 (7.7)	
Post (includes Veterans)	36 (52.2)	41 (41.0)	77 (45.6)	
Other	20 (29.0)	28 (28.0)	48 (28.4)	
No. of deployments, mean (SD)	1.8 (1.2)	1.8 (1.5)	1.8 (1.4)	.91
Have kids at home, n (%)	61 (87.1)	68 (68.0)	129 (75.9)	.004
No. minor kids at home, mean (SD)	2.1 (1.5)	1.5 (1.3)	1.7 (1.4)	.009
No. special needs kids at home, mean (SD)	.29 (.57)	.20 (.55)	.24 (.56)	.33
No. full time kids at home, mean (SD)	1.9 (1.5)	1.3 (1.3)	1.6 (1.4)	.004
Years in current relationship, mean (SD)	9.3 (5.7)	8.3 (6.9)	8.7 (6.4)	.35

Note: One participant is missing age, marital status, race; 2 missing residential environment; 7 missing number of deployments completed. Employment is not of mutually exclusive categories.

[^]From comparing characteristics between Group vs. Web group using two-sample t-test for continuous variables and chi-square test for categorical variables

Table 11. Baseline Levels of Various Outcomes in Participants Who Completed the Study Before the Pandemic (3/13/2020) by Web vs. Group Intervention and in Total

Measure	Outcome Domain	Group (N = 70)	Website (N = 100)	Total (N = 170)	p-value [^]
PHQ ¹	Depression	7.2 (5.3)	6.6 (5.9)	6.8 (5.6)	.48
GAD ¹	Anxiety	7.9 (5.1)	6.2 (5.3)	6.9 (5.3)	.04
PSS10 ¹	Stress	19.2 (7.7)	16.1 (7.2)	17.4 (7.5)	.008
PCL ¹	PTSD symptoms	33.8 (15.5)	30.7 (15.3)	32.0 (15.4)	.20
CHAOS ¹	Chaos at home	17.5 (7.8)	14.4 (8.4)	15.7 (8.3)	.01
SWLS ²	Life satisfaction	22.1 (7.5)	23.3 (6.3)	22.8 (6.8)	.24
LOT-R ²	Life orientation, optimism	14.4 (5.9)	14.7 (5.3)	14.5 (5.5)	.76
LET ²	Life engagement	24.8 (4.6)	25.1 (5.0)	25.0 (4.8)	.70
ISEL ²	Interpersonal support	35.9 (7.3)	36.9 (7.1)	36.5 (7.2)	.38
RDAS ²	Dyadic adjustment	47.4 (10.3)	50.6 (8.4)	49.3 (9.3)	.03
Currently in individual therapy, n (%)		22 (31.4)	17 (17.0)	39 (22.9)	.03
Currently in group therapy, n (%)		4 (5.7)	1 (1.0)	5 (2.9)	.07

Note: Cell values are mean (SD).

¹Higher scores correspond to greater health, symptom, or life burden.

²Higher scores correspond to less health, symptom, or life burden.

Changes in Outcomes During Follow-up. Group intervention participants did not show improvement in the ten outcome measures during the follow-up times (Table 12, Figure 2). On the other hand, web-based intervention participants showed significant time-averaged improvement in depression by 1.7 points (standardized effect size (ES) = 0.34), in anxiety by 2.1 points (ES=.42), in stress by 2.2 points (ES=.33), and in life satisfaction by 2.6 points (ES=.48). The ES was calculated as the estimated time-averaged mean divided by the common standard deviation of each measure across each follow-up time. When the analyses were further adjusted for baseline covariates associated with intervention condition and with missing follow-up assessment (Table 13), results were nearly identical to the primary findings where significant improvements were seen in depression, anxiety, stress, and life satisfaction only in web-based intervention participants. Adjusted analyses where time was included as the actual time of assessment also showed results consistent with primary findings (Table 13). We also did not find slopes to be significant in either condition at the pre-determined significance level (Table 14).

Frankly, these findings were unexpected. We expected the group intervention to show the strongest outcomes for participants. The lack of findings is surprising and counter to our previous experience with the in-person intervention and with anecdotal accounts from group leaders. We are working with a statistician to look at these analyses more closely, and to specifically look at whether there is a severity effect happening, meaning that the intervention works differently for participants who present with different levels of symptom severity. The use of self-selection was a great benefit to sample recruitment and timeline implementation of groups, but has proven a challenge in better understanding the impact of initial discrepancies between the two samples in health burden. We were also surprised to see such a strong positive impact of the web-based intervention, and are eager to continue exploring those effects.

Table 12. Mean Changes from Baseline at 3 Follow-up Times, Time-Averaged Changes by Intervention Group, and Difference in Time-Averaged Changes Between Intervention Groups for Various Outcome Measures

Measure	Group				Website				Website – Group
	Post-Treatment	Month 3	Month 6	Time-Averaged Change ³ Mean (95% CI)	Post-Treatment	Month 3	Month 6	Time-Averaged Change ³ Mean (95% CI)	
PHQ ¹	.82 (4.13)	.52 (5.10)	.80 (4.83)	.67 (-2, 1.5)	1.44 (5.33)	1.81 (5.10)	1.70 (5.13)	1.7 (.9, 2.4)[”]	1.0 (-1, 2.2; .09)
GAD ¹	1.51 (4.46)	.73 (6.16)	1.22 (6.22)	.8 (-1, 1.7)	1.71 (4.46)	2.22 (4.60)	1.74 (4.45)	2.1 (1.4, 2.9)[”]	1.3 (.2, 2.5; .03)
PSS10 ¹	2.51 (5.59)	.73 (6.76)	1.60 (7.65)	1.2 (.01, 2.4)[”]	1.31 (6.58)	2.91 (6.81)	1.70 (6.31)	2.2 (1.2, 3.2)[”]	1.0 (-6, 2.5; .23)
PCL ¹	3.34 (11.91)	2.83 (14.66)	.81 (15.29)	1.9 (-4, 4.1)	0.52 (10.49)	2.85 (12.13)	2.51 (13.13)	2.1 (.2, 4.1)[”]	.3 (-2.7, 3.3; .85)
CHAOS ¹	0.84 (4.73)	.38 (4.55)	-0.03 (5.50)	.2 (-9, 1.2)	-0.02 (5.39)	0.22 (5.85)	0.63 (5.37)	.4 (-4, 1.3)	.3 (-1.1, 1.7; .72)
SWLS ²	.87 (3.91)	1.71 (4.99)	2.12 (5.32)	1.4 (.4, 2.4)[”]	1.97 (5.49)	2.59 (6.32)	2.60 (5.58)	2.6 (1.7, 3.4)[”]	1.2 (-2, 2.5; .09)
LOT ²	.16 (3.49)	.00 (3.93)	.45 (4.39)	.3 (-5, 1.0)	1.08 (3.56)	1.67 (3.98)	1.94 (3.48)	1.5 (.9, 2.1)[”]	1.2 (.3, 2.2; .01)
LET ²	-.44 (3.85)	-.04 (3.38)	.23 (3.12)	-.1 (-8, .6)	.37 (4.27)	.21 (3.61)	.36 (4.22)	.3 (-3, .9)	.4 (-5, 1.4; .35)
ISEL ²	-.34 (5.62)	.95 (6.51)	.28 (6.19)	.2 (-9, 1.4)	.47 (5.03)	.81 (7.19)	.79 (6.29)	.6 (-4, 1.6)	.4 (-1.1, 1.9; .63)
RDAS ²	-.52 (5.48)	.00 (6.38)	-1.68 (9.20)	-.8 (-2.3, .7)	-1.57 (6.59)	-.22 (6.97)	-2.01 (8.42)	-1.5 (-2.8, -.2)[”]	-.6 (-2.7, 1.4; .53)

Note: Cell values are mean (SD), unless otherwise specified.

Abbreviations: CI is confidence interval. For measures, please see domain column under Table 2 for descriptions.

[”]p<0.05; [”]p<0.005 [significant with Bonferroni adjustment].

¹ Measures with higher scores corresponding to greater health, symptom or life burden.

² Measures with higher scores corresponding to worse health, symptom or life burden.

³ For each measure, time-averaged changes and between-group difference in the time-averaged changes are from a mixed model with changes from baseline as the response variable, time (in weeks), an indicator for web intervention and baseline values of the outcome measure as predictors, and participants as random intercepts.

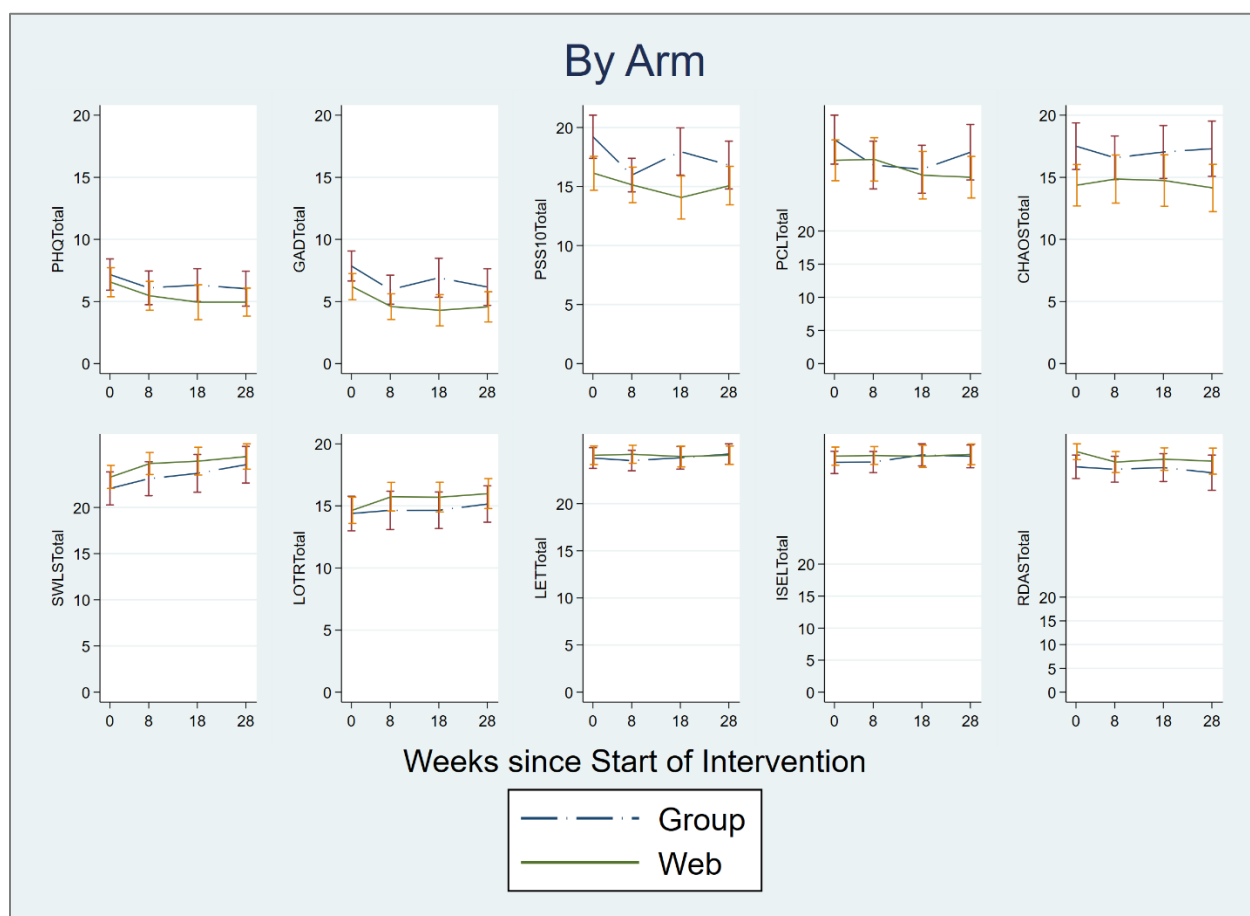


Figure 2. Cross-sectional means over time by condition for 10 outcome measures in those who selected either group or web-based condition and whose last study assessments were due before 13 March 2020 (N=170). For the top five measures, higher scores are worse outcomes, and for the five bottom measures, higher scores are better outcomes.

Table 13. Covariate Adjusted Time-Averaged Changes Across Three Follow-up Assessment Times by Intervention Group and Between Intervention Groups Where Times Are Included as Study Assessment Times or as Raw Time Since Baseline Assessment

Measure	Using Study Assessment Time			Using Actual Survey Time		
	Group	Web	Web – Group	Group	Web	Web – Group
	Time-Averaged Change ³ Mean (95% CI)	Time-Averaged Change ³ Mean (95% CI)	Difference ³ (95% CI; <i>p</i> -value)	Time-Averaged Change ³ Mean (95% CI)	Time-Averaged Change ³ Mean (95% CI)	Difference ³ (95% CI; <i>p</i> -value)
PHQ ¹	.58 (-.27, 1.43)	1.93 (1.21, 2.65)[”]	1.36 (.20, 2.51; .02)	.55 (-.31, 1.40)	1.95 (1.23, 2.68)[”]	1.40 (-.001, .004; .59)
GAD ¹	.71 (-.16, 1.57)	2.36 (1.63, 3.09)[”]	1.65 (.47, 2.83; .006)	.67 (-.20, 1.54)	2.38 (1.65, 3.12)[”]	1.71 (.51, 2.90; .005)
PSS10 ¹	1.06 (-.14, 2.25)	2.45 (1.44, 3.46)[”]	1.40 (-.24, 3.03; .09)	1.07 (-.14, 2.27)	2.45 (1.43, 3.47)[”]	1.38 (-.27, 3.04; .10)
PCI ¹	1.74 (-.48, 3.96)	2.62 (.71, 4.52)[”]	.88 (-.08, .11; .78)	1.69 (-.55, 3.94)	2.65 (.73, 4.57)[”]	.96 (-2.15, 4.07; .55)
CHAOS ¹	.14 (-.87, 1.15)	.63 (-.23, 1.49)	.49 (-.90, 1.88; .49)	.31 (-.72, 1.34)	.20 (-.81, 1.22)	.58 (-.28, 1.44; .19)
SWLS ²	1.36 (.32, 2.40)[”]	2.66 (1.78, 3.53)[”]	1.30 (-.12, 2.71; .07)	1.25 (.19, 2.31)[”]	2.72 (1.84, 3.61)[”]	1.47 (.03, 2.92; .045)
LOTR ²	.20 (-.53, .92)	1.64 (1.03, 2.25)[”]	1.44 (.45, 2.43; .004)	.14 (-.59, .88)	1.67 (1.05, 2.29)[”]	1.53 (.53, 2.53; .003)
LET ²	-.34 (-1.04, .36)	.59 (-.002, 1.17)	.93 (-.03, 1.88; .06)	-.39 (-1.09, .31)	.62 (.03, 1.21)[”]	1.01 (.05, 1.97; .04)
ISEL ²	.08 (-1.05, 1.21)	.87 (-.07, 1.82)	.79 (-.74, 2.32; .31)	.02 (-1.12, 1.15)	.91 (-.04, 1.87)	.90 (-.65, 2.45; .26)
RDAS ²	-1.13 (-2.60, .34)	-1.05 (-2.30, .20)	.08 (-1.93, 2.09; .94)	-1.03 (-2.51, .46)	-1.12 (-2.37, .13)	-.09 (-2.13, 1.94; .93)

Abbreviations: CI is confidence interval. For measures, please see domain column under “Baseline Levels” table for descriptions.

[”]*p*<0.05; [”]*p*<0.005 [significant with Bonferroni adjustment]

¹Measures with higher scores corresponding to greater health, symptom or life burden.

²Measures with higher scores corresponding to worse health, symptom or life burden.

³For each measure, estimates are obtained from a mixed model described under “Mean Changes from Baseline” table, but further adjusted for age, male, full-time working status, number of full-time kids at home, and education level (high school or less, some college, bachelor’s, or graduate degree).

Table 14. Weekly Slope in Changes from Baseline in Various Outcomes During the Six Months of Post-Intervention Follow-up; Positive Slopes Correspond to Continuing Improvement During Follow-up Times and Negative Slopes Correspond to Worsening Over Time

Measure	Domain	Slope per Week	Slope per Week	Slope Difference
		Group	Web	Web - Group
PHQ ¹	Depression	-.003 (.91)	.02 (.33)	.03 (.47)
GAD ¹	Anxiety	1.11 (.23)	.004 (.89)	.01 (.75)
PSS10 ¹	Stress	-.04 (.25)	.02 (.57)	.06 (.22)
PCL ¹	PTSD symptoms	-.11 (.14)	.13 (.048)	.25 (.02)
CHAOS ¹	Chaos at home	-.04 (.22)	.04 (.12)	.08 (.05)
SWLS ²	Life satisfaction	.059 (.04)	.044 (.07)	-.01 (.70)
LOTR ²	Life orientation, optimism	.021 (.32)	.030 (.10)	.009 (.74)
LET ²	Life engagement	.035 (.09)	-.032 (.23)	.002 (.90)
ISEL ²	Interpersonal support	.035 (.26)	.025 (.35)	-.01 (.81)
RDAS ²	Dyadic adjustment	-.052 (.24)	-.023 (.56)	.03 (.62)

Note: In parenthesis are *p*-values testing for slope = 0 or slope difference = 0.

For each measure, slope estimate is based on a mixed model fit with change from baseline as the response variable, and time (in weeks), indicator for web intervention and time by web indicator interaction term and baseline values of the outcome variable as predictors.

¹Measures with higher scores corresponding to greater health, symptom or life burden.

²Measures with higher scores corresponding to worse health, symptom or life burden.

8) Longitudinal (Pre through 6MFU) Mental Health Outcomes for Web-Based Participants Who Began the Study After the Pandemic Started

As mentioned earlier in this report, we effectively have three subsets of participants in our sample, based on their program cycle relative to the start of pandemic precautions in mid-March 2020 and the subsequent early end of enrollment for the group condition of HFS. Through comparison and contrast of their quantitative and qualitative data, we have an interesting opportunity to explore possible impacts experienced by military spouses and families during the first year of the pandemic.

In addition to the results above about participants whose study time ended before the pandemic, we have begun some initial analyses of data from the web-based participants (*N* = 47) who joined the study after 13 March 2020.

Below we provide some figures and tables with preliminary results. We intend to look more into possible predictors and covariates, as well as the potential cohort effect related to the pandemic and its impact.

Figures 3 and 4 show cross-sectional means over time for the same 10 measures analyzed for the pre-pandemic sample subset described earlier. The methodology is also similar.

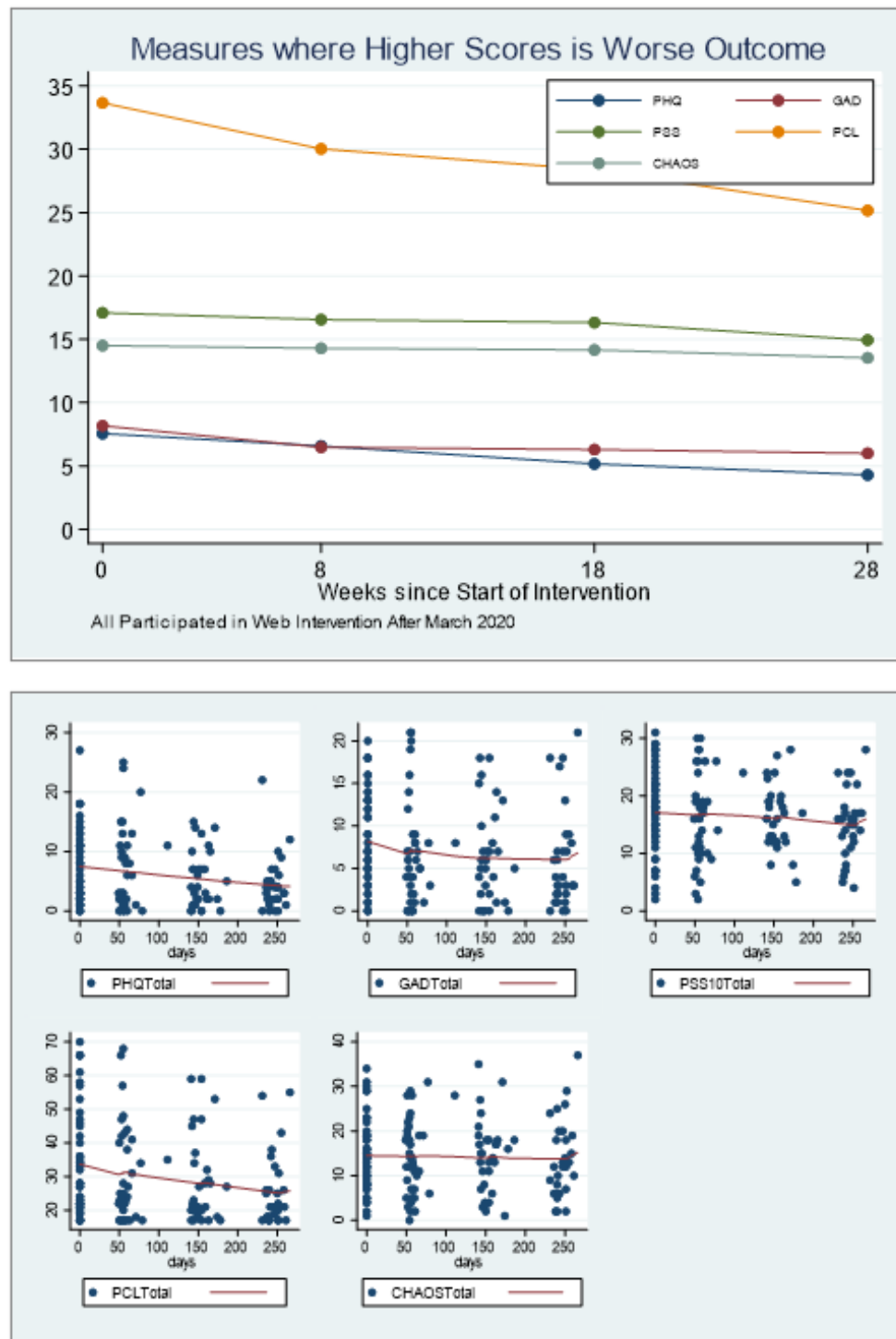


Figure 3. Cross-sectional means over time for 5 outcome measures in those who selected the web-based condition and began the study after 13 March 2020 (N=47). These measures screen for depression, anxiety, perceived stress, PTSD, and chaotic home environments, and higher scores reflect worse outcomes. Decreasing scores over time indicate self-reported symptom improvement.

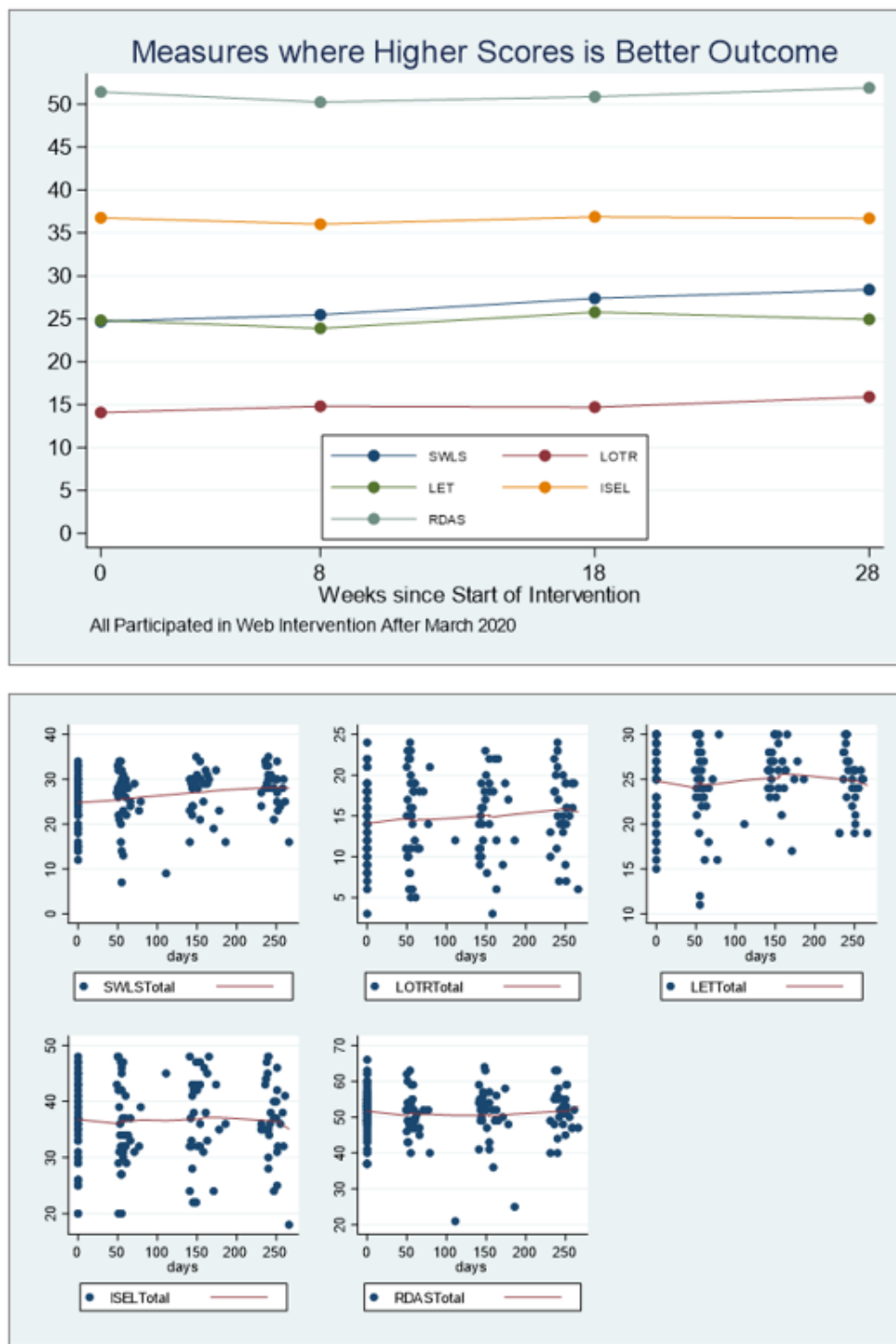


Figure 4. Cross-sectional means over time for 5 additional outcome measures in those who selected the web-based condition and began the study after 13 March 2020 (N=47). These measures are designed to measure life satisfaction, optimism, life engagement, interpersonal support, and dyadic adjustment, and higher scores reflect better outcomes. Increasing scores over time indicate self-reported improvement.

Table 15 displays the mean scores for the 10 outcome measures for the pre, post, 3-month, and 6-month assessments. Note that week numbers are used for convenience and are approximate; each assessment window remained open for 6 weeks before closing, with weekly reminders until participants submitted surveys or the window closed. Thus, actual time between assessments varied within and across participants.

Table 15. Mean Outcome Scores for 10 Outcome Measures Over 28 Weeks of Follow-up Time

Week	<u>PHQ</u> Total	GAD Total	PSS10 Total	PCL Total	CHAOS Total
0	7.55 (6.13)	8.17 (5.57)	17.09 (7.30)	33.66 (15.77)	14.50 (8.08)
8	6.58 (6.77)	6.47 (6.23)	16.55 (7.74)	30.03 (14.13)	14.29 (8.59)
18	5.16 (4.69)	6.29 (5.62)	16.32 (5.47)	28.39 (12.96)	14.16 (8.36)
28	4.29 (4.41)	6.00 (5.80)	14.94 (5.99)	25.17 (10.54)	13.53 (8.65)
Week	<u>SWLS</u> Total	LOTR Total	LET Total	<u>ISEL</u> Total	RDAS Total
0	24.68 (5.86)	14.09 (4.83)	24.83 (4.33)	36.77 (7.49)	51.43 (6.62)
8	25.47 (6.50)	14.82 (5.48)	23.89 (4.78)	36.03 (7.39)	50.24 (7.43)
18	27.39 (4.85)	14.71 (5.09)	25.77 (3.20)	36.87 (7.83)	50.87 (7.76)
28	28.39 (4.03)	15.90 (4.85)	24.94 (3.44)	36.70 (7.30)	51.90 (5.74)

Cell values are mean (standard deviation).

Table 16 shows outcome trends. To account for multiple hypotheses testing, we used p -values less than 0.005 as statistically significant. In the table, the bolded measures (i.e., for depression, PTSD symptoms, life satisfaction, and optimism) show significant change, somewhat similar to the analyses of the pre-pandemic portion of the sample. That is, they show significantly decreased scores for measures where lower scores are better outcomes, and significantly increased scores for measures where higher scores are better outcomes. The last column shows the expected changes from baseline to 6 months.

Table 16. Trends in Outcomes During the 6-Month Post-Baseline Period

Measure	Outcome Domain	Time Slope (in days)	S.E.	p -value	Change from Baseline to Month 6 (95% CI)
PHQ ¹	Depression	-.012	.004	.001	-2.23 (-3.50, -.97)
GAD ¹	Anxiety	-.007	.003	.034	-1.26 (-2.43, -.09)
PSS10 ¹	Stress	-.010	.004	.011	-1.78 (-3.15, -.40)
PCL ¹	PTSD symptoms	-.027	.005	<.001	-4.83 (-6.76, -2.91)
CHAOS ¹	Chaos at home	-.002	.004	.62	-.35 (-1.73, 1.02)
SWLS ²	Life satisfaction	.013	.003	<.001	2.28 (1.39, 3.17)
LOTR ²	Life orientation, optimism	.008	.002	<.001	1.47 (.75, 2.19)
LET ²	Life engagement	.003	.002	.17	.62 (-.25, 1.49)
ISEL ²	Interpersonal support	.004	.004	.27	.73 (-.55, 2.01)
RDAS ²	Dyadic adjustment	-.001	.004	.78	-.19 (-1.53, 1.15)

Note: Mixed models with random intercepts for participants were used for each outcome measure to model up to four repeated assessed outcomes per participant over the 6-month period post baseline. Time was included as days since the baseline assessment.

iv) Other achievements

Nothing to report.

v) Stated goals not met

We met our goals related to partner engagement, having built solid relationships over time that enabled us to hold groups in multiple cities and also opened doors to valuable recruitment opportunities, such as direct mailing of program brochures to thousands of National Guard service members and families. We also successfully enrolled hundreds of participants into the program and conducted multi-method, multi-timepoint assessments with them. We were very close to meeting our goal of recruiting 321 participants (at 319 enrolled), despite the disruptions caused by the pandemic. The necessity of ending the group condition early makes it challenging to evaluate the group condition vs. the web-based condition, so we plan to continue consulting with a statistician.

3.3. What opportunities for training and professional development has the project provided?

Training and professional development opportunities completed by our team in Year 7 included those listed below. See annual reports for training and professional development before Year 7.

- ReCon Veteran Resilience Conference
- Virtual Caregiver Summit (VA Caregiver Support)
- 5th Annual National Convening (Elizabeth Dole Foundation and U.S. Department of Veterans Affairs)
- LGBTQ+ in the Military Panel
- UM Vets Week: Graduate Student Panel
- Michigan Medicine Veterans Panel
- War Dogs, Working Dogs, and Therapy Dogs
- Military and the Law in 2020
- Vietnam War Veteran Panel
- Undergraduate Student Veterans and Military Panel
- Military-Connected Family Student Panel
- Weight of Honor Film Discussion and Panel
- Women in the Military Panel
- Sexual Harassment: #IAmVanessa
- Bristol Myers Squibb (BMS) Veterans Salute
- Veteran Community Engagement Study Interview (Portland VA)
- Straight Talk
- Anti-Racism Strategic Plan (working with participants without bias, DEI)
- Stand-To 2021 National Veterans Convening (George W. Bush)
- Protect Michigan Commission - Veterans
- Michigan Women Veterans Coalition Update

- A Celebration of Service: Welcoming VA Secretary Denis McDonough and Meg Kabat (Elizabeth Dole Foundation)
- Star Behavioral Health Providers Engagement Call
- Star Behavioral Health Providers: CBT for Insomnia Related to Deployment
- Star Behavioral Health Providers Tier 3 Training: PE for PTSD
- Star Behavioral Health Providers Tier 3 Training: Assessment & Treatment of Suicidal Ideation in US Military
- Star Behavioral Health Providers Tier S Training: Military Couples and Deployment; Helping Couples Navigate Relationship Changes
- Changes at VA for Women Veterans in the Deborah Sampson Act (National Association of State Women Veteran Coordinators)
- Campus COVID-19 Briefings
- Social Work Research Seminar
- Peer Support Training (Defense Health Agency)
- Michigan Veterans Affairs Agency 2020 Annual Report- Facebook Live
- Office for Health Equity and Inclusion Community Conversation: Veterans as Colleagues
- UM-Flint Virtual Event: Sexual Assault in the Military
- Experience of Women Veterans
- Hazard Communication/Right to Know
- UMHS Compliance for All Staff
- HIPAA Training for Researchers
- PEERRS Certification for Human Subjects Research
- Fire Safety for Staff in Non-Patient Care Areas
- Critical Incident Review
- Patient Safety for All Staff Except Medical Clinical Faculty and House Officers
- High Reliability Training

3.4. How were the results disseminated to communities of interest?

Years 3–7 focused on training community providers in the HFS model, recruiting and enrolling participants into HFS, offering HFS groups at community sites, providing participants with website access to the intervention, and completing the multi-wave evaluation protocol with participants as they completed the group or web-based condition of HFS. We attended an expansive number of meetings with local and state partners to share information about HFS for the purpose of recruiting additional community sites and to establish a recruitment pipeline for HFS participants. Data collection ended late in Year 7, after which longitudinal quantitative and qualitative analyses could take place, as described earlier in this report. We will disseminate study findings once final analyses and manuscripts are completed.

3.5. What do you plan to do during the next reporting period to accomplish the goals?

Funding has ended.

4. IMPACT:

4.1. What was the impact on the development of the principal discipline(s) of the project?

The HFS mobile website and Administrative Console have the potential to significantly impact the well-being of military and veteran spouses/partners who before could not participate in an in-person program because of geographic location, transportation issues, or other time commitments. The website includes all content components of the HFS program, delivered online, through a secure, password-protected site that is easily accessible via mobile/smart phone platforms. Military and veteran spouses/partners who previously would have struggled to attend an in-person program have the opportunity to receive the same evidence-informed materials in an online format. The ability to offer a resiliency program virtually took on added importance during the pandemic, given extended phases of social distancing and the possibility of future stay-at-home orders. Recruitment during the period of restriction was remarkably strong, representing our strongest quarter. These numbers reflect the high need of this population during periods of stress and uncertainty, and speak to the high value and appeal of a web-based or virtual program supporting resilience and mental health. Given the findings that the web-based intervention was also associated with positive mental health outcomes for participants, the value of this modality is particularly high.

The project has had a direct and positive impact on the families who participated in HFS, both in the group and in the web-based condition. Anecdotally, and with follow-up data, participants overwhelmingly reported a strong connection with the HFS materials and showed gains in mental health functioning, stress management, and resilience characteristics.

The project also had a positive impact on the community providers who led the HFS group intervention. As described previously, this has been a high-quality experience for the providers, most of whom had little previous professional experience with military/veteran populations. Through this project, we created communities of excellence where providers are now trained in evidence-based practices to support military and veteran families. Their impact on the community is expected to continue beyond the life of the grant.

4.2. What was the impact on other disciplines?

Nothing to report.

4.3. What was the impact on technology transfer?

Nothing to report.

4.4. What was the impact on society beyond science and technology?

Nothing to report.

5. CHANGES/PROBLEMS:

5.1. Changes in approach and reasons for change

The following information has previously been discussed in quarterly and annual reports, and a modified Scope of Work was approved in Year 3. In the original grant proposal for this project, the HFS mobile website (Goal 1) was intended as a supplemental option for HFS participants to have greater access to program materials. During the initial award period, the Peer Review Panel recommended a study design change to include a comparison condition for HFS. This feedback led to a significant design modification, resulting in a quasi-experimental study with participant self-selection into one of two HFS intervention conditions: 1) HFS in-person group or 2) a web-based version of HFS delivered via the mobile website. This design change strengthened the overall study and could allow more meaningful interpretation of the impact of HFS. However, this modification meant that the HFS mobile website had to be fully operational prior to initiation of any other elements in the project (e.g., participants could not be enrolled in HFS until both web-based and group conditions were viable; providers should receive HFS training near to the time of launching their first HFS group to avoid loss of knowledge). Thus, the overall timeline of the project was modified to prioritize the development of the mobile website. We were fiscally conservative throughout the project, and had funds for no-cost extensions in Years 5 and 6 to continue activities to meet the original aims of the study. A final no cost-extension was approved for Year 7 on 28 July 2020. There were no other changes in approach.

5.2. Actual or anticipated problems or delays and actions or plans to resolve them

Timeline. As noted above, development of the HFS mobile website was shifted to a priority activity prior to beginning other aims of the project. This activity was delayed for several months after receipt of funding because our collaborating team at the Center for Health Communications Research needed to clear staff effort for the project. In Quarter 2 of Year 1, CHCR staff launched a sprinting development for the website, and completed the site development in Year 1, with beta testing finalized in Year 2. Because of this delay, efforts on Goals 2 and 3 were not launched in earnest until Year 3.

Effects of the coronavirus pandemic. Necessary restrictions on in-person activities enacted at the federal, state, and institutional levels to help prevent the spread of the coronavirus directly affected the HFS program during Years 6 and 7. Michigan's stay-at-home status began on 23 March 2020, disrupting early Quarter 3 plans for both a group at the Southfield site and a large community provider training in Grand Rapids that would have led to holding new groups in that region. Because of ongoing state and university-level restrictions, we could not hold any groups or trainings during the second half of Year 6. The effects of the pandemic also spilled over into Year 7 since we determined it would not be possible to safely restart in-person groups within the designated timeline that remained for recruitment and intervention.

Although we were unable to hold in-person groups, we were able to start participants in the web-based condition immediately, giving them access to new resources and a useful skill-building curriculum during this challenging time. In total, 57 participants began the HFS web-based component after COVID-19 restrictions took effect.

As described in previous reports, our team carefully considered whether to pursue reactivation of in-person research activities. Near the end of Year 6, none of our community partners were holding in-person groups, and we remained under University recommendations to work from home. With the potential safety risks to participants, the uncertain trajectory of the virus and community spread in our area, and the significant changes that would have been needed to our intervention protocol, we decided not to pursue a return to in-person research activities. Given that our project timeline would have also required recruiting, launching, and completing the group in a single quarter, this decision was prudent, yet unfortunate.

Future opportunities may provide funding for advanced analyses of the data collected during the pandemic, which could contribute knowledge about the recent experiences of military families and the impact of the web-based HFS resiliency intervention during this time of heightened uncertainty and change. The unanticipated context in which some data were collected could also help us tailor the scalable virtual HFS program to better serve the needs of military families while the consequences of the pandemic continue to affect the nation for years to come.

Participant recruitment. Year 3 showed a steady pace of recruitment and enrollment into the project. Year 4, particularly the third and fourth quarters, showed a decline that corresponded with staff turnover, reduction in the public offering of military-focused outreach events, and refreshing of recruitment materials which required an extended approval process from the IRB. At that time, we implemented a plan to help address recruitment rates. However, we encountered another series of staff changes during the first and second quarters of Year 5, which affected recruitment rates temporarily while we hired and trained new staff. Once fully staffed with a solid team, recruitment rates in the latter half of Year 5 recovered as a result of the team's continued implementation of the recruitment plan.

Early in Year 6, in consultation with the Science Officer for our program, we revised our recruitment targets for the project from 360 to 321. A few months later, the pandemic shut down in-person activities, which deeply impacted outreach and recruitment activities and prevented us from offering in-person groups. Despite these challenges, we were able to continue with virtual recruitment, telephone enrollment and consent, online data collection, and the option of a web-based intervention condition until the recruitment period ended in Quarter 1 of Year 7. We came very close to our project recruitment goal ($N = 319$ of 321). See past quarterly and annual reports for details about the team's extensive outreach, recruitment, and support efforts before and during the pandemic.

Participant retention. In addition to recruitment of participants, retention of participants throughout the four waves of data collection was a priority. We began noticing some drift in retention near the end of Year 3 and put into place a number of strategies to address this issue. After a review of data retention rates in the first quarter of Year 4, we developed and implemented a standard operating procedure (SOP) for participant retention that included more frequent contacts with the potential for warm contacts (e.g., phone calls at non-business hours). We also began maintaining informal contacts with participants during all waves of their study involvement to foster an ongoing relationship so that they may respond more readily to formal data assessment requests. We continued these efforts throughout the remainder of the project.

For example, in December 2020, we sent holiday cards to participants ($N = 241$) to thank them for taking part in the study and to help engage participants still in the data collection waves at the time. We also emailed newsletters each quarter since we initiated it to help maintain an ongoing, informal connection with participants. For example, in Year 7 we sent newsletters to an average of 593 recipients per quarter and also made the newsletters available online through links on our program website (<https://m-span.org/blog/category/homefront-strong/>) and social media. For newsletters distributed via Constant Contact in Year 7, the open rates ranged from 10% to 41%, depending on the type of recipient (e.g., community partners, participants). The open rates overall reflect solid performance, as the nonprofit industry benchmark for open rates is 21%.

After implementing the SOP, we saw encouraging increases in completions of the 3-month and 6-month assessments. See previously submitted annual reports for further details about monitoring of retention rates over time.

5.3. Changes that had a significant impact on expenditures

Because of the change in timeline and prioritizing Goal 1 (HFS mobile website development), the bulk of activities for Goal 2 (Training community providers) and Goal 3 (Enrolling participants into HFS group or web-based conditions) were adjusted to launch in Year 3. Accordingly, we delayed the hiring of staff critical for Goals 2 and 3 and preserved a significant portion of the overall budget. Throughout Years 3–7, we were fiscally conservative as we also met our goals of the project. No-cost extensions were approved for Years 5 and 6, with a final no-cost extension in Year 7, which was approved on 28 July 2020.

5.4. Significant changes in use or care of human subjects

There were no significant changes in the use or care of human subjects. Our IRB approval remains current with the University of Michigan and HRPO. The University of Michigan IRBMED approved the most recent Scheduled Continuing Review, with an approval period of 16 June 2021 through 15 June 2022. Approval materials for the Continuing Review were submitted to HRPO on 22 June 2021 and acknowledged on 8 July 2021.

5.5. Significant changes in use or care of vertebrate animals

Nothing to report.

5.6. Significant changes in use of biohazards and/or select agents

Nothing to report.

6. PRODUCTS:

6.1. Publications, conference papers, and presentations

Final data collection closed in the last quarter of Year 7, and manuscripts based on longitudinal and qualitative analyses described earlier in this report are planned for completion in 2022.

6.2. Website(s) or other Internet site(s)

As described, the HFS mobile website and the HFS Administrative Console (Goal 1) were fully operational and used successfully with participants. To access the development portal of the website, please use the following website address, with the provided username and password. Please note that this is the development site, with sample and nonsensical answers on some pages.

<https://keeshfs-dev.miserver.it.umich.edu/>

username: test@example.com

password: HomeFront

6.3. Technologies or techniques

Nothing to report.

6.4. Inventions, patent applications, and/or licenses

Nothing to report.

6.5. Other products

HomeFront Strong participant workbook

HomeFront Strong group leader manual

HomeFront Strong training protocol, with slide deck

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

7.1. What individuals have worked on the project?

The following individuals worked on the project during its final year (Year 7). See past annual reports for nearest person month worked in previous years.

Name:	Michelle Kees, PhD
Project Role:	Principal Investigator
Researcher Identifier	0000-0001-5953-2317
Nearest person month worked:	4.68 CM in Year 7
Contribution to Project:	Dr. Kees is responsible for implementing all aspects of the project. She is the lead author on the HFS program materials, including the curriculum, participant workbook, training materials, and program content for the mobile website. She supervises all staff on the project and co-leads the community training and coaching. She also interfaces closely with partners, including the Michigan National Guard, and provides back-up on HFS adult sessions and leading the Child Program.
Funding Support:	No other support
Name:	Hyungjin Myra Kim, ScD
Project Role:	Co-Investigator
Researcher Identifier	Not applicable
Nearest person month worked:	0.98 CM in Year 7
Contribution to Project:	Dr. Kim is a Research Scientist at the University of Michigan's Center for Consulting for Statistics, Computing and Analytics Research and an Adjunct Professor of Biostatistics. Her research interest is in longitudinal data analyses and health services research. She collaborates with HFS as a co-investigator and provides expertise and oversight on the multi-method, multi-wave longitudinal data analyses of the project.
Funding Support:	No other support

Name:	Jennifer Lamb, MSW
Project Role:	Program Manager through April 2021
Researcher Identifier	Not applicable
Nearest person month worked:	6.10 CM in Year 7
Contribution to Project:	Ms. Lamb left the team in Year 7 for a new position at the state veteran's affairs agency. She performed project management and study coordinator duties, in addition to staff supervision, direct liaison with the Michigan National Guard, Michigan Veterans Affairs Agency and community partners, and community site recruitment. She also co-led community provider trainings, trained and coached HFS group facilitators, and co-led HFS groups in the community as needed.
Funding Support:	No other support
Name:	Holli Herr
Project Role:	Clinical Therapist through May 2021
Researcher Identifier	Not applicable
Nearest person month worked:	2.30 CM in Year 7
Contribution to Project:	Ms. Herr was responsible for co-leading HFS groups. She also assisted with community facilitator trainings, participant enrollments and assessments, partner coaching, partnership connections, and conducting participant interviews.
Funding Support:	No other support
Name:	Stephanie Thompson
Project Role:	Research Coordinator starting March 2021
Researcher Identifier	Not applicable
Nearest person month worked:	6.00 CM in Year 7
Contribution to Project:	Ms. Thompson joined the team from a related project to manage the final data collection (taking over some of the Program Manager's activities) and assist with data analysis. She heads the qualitative coding team and conducts quantitative analyses of the provider and facilitator data. She also helps prepare results for reports, publication, and presentation.
Funding Support:	No other support

Name:	Margy Howes
Project Role:	Project Administrator through January 2021
Researcher Identifier	Not applicable
Nearest person month worked:	.84 CM in Year 7
Contribution to Project:	Ms. Howes was responsible for providing administrative support to the HFS team.
Funding Support:	No other support
Name:	Chrysta Meadowbrooke
Project Role:	Research Evaluator
Researcher Identifier	Not applicable
Nearest person month worked:	7.80 CM in Year 7
Contribution to Project:	Ms. Meadowbrooke has contributed to the methodological design and the IRB proposals. She is responsible for the Qualtrics surveys and managing the database for both the provider and participant data collection. She also analyzes data and prepares results for reports, publication, and presentation. She trains and oversees other team members who work with study data.
Funding Support:	No other support

Name:	Alyssa Wealty
Project Role:	Communications Specialist
Researcher Identifier	Not applicable
Nearest person month worked:	0.75 CM in Year 7
Contribution to Project:	Ms. Wealty is responsible for producing and distributing quarterly HFS newsletters, managing social media accounts, and supporting other communications needs.
Funding Support:	No other support
Name:	Iris Hadziegic
Project Role:	Research Assistant through early August 2021
Researcher Identifier	Not applicable
Nearest person month worked:	2.30 CM in Year 7

Contribution to Project:	Ms. Hadziegric assisted with outreach and recruitment, Child Team, and other activities such as transcription and correction of qualitative interviews, preliminary analyses (as a member of the qualitative coding team), and administrative tasks.
Funding Support:	No other support
Name:	Emma Czajka
Project Role:	Research Assistant
Researcher Identifier	Not applicable
Nearest person month worked:	4.20 CM in Year 7
Contribution to Project:	Ms. Czajka assists with study activities such as Child Team, transcription and correction of qualitative interviews, preliminary analyses (as a member of the qualitative coding team), and outreach mailings. She also assists with report preparation.
Funding Support:	No other support
Name:	Shelly Chang
Project Role:	Application Programmer (CHCR)
Researcher Identifier	Not applicable
Nearest person month worked:	0.36 CM in Year 7
Contribution to Project:	At CHCR, Ms. Chang has provided technical engineering, programming, and production services for the HFS mobile website since Year 1.
Funding Support:	Nothing to report
Name:	Jay Semerad
Project Role:	Project Manager (CHCR)
Researcher Identifier	Not applicable
Nearest person month worked:	0.36 CM in Year 7
Contribution to Project:	At CHCR, Mr. Semerad has directed the technical service activities for the HFS mobile website and the administrative console.
Funding Support:	Nothing to report

The following individuals worked on the project in the past but not during its final year. See previous annual reports for nearest person month worked in past years.

Name:	Alison Thompson
Project Role:	Outreach Coordinator through August 2020
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. Thompson was responsible for recruiting participants through establishing direct relationships with local and state-level military/veteran service organizations, attending community and military/veteran events (including virtual events after COVID-19 restrictions began), completing community mapping and canvassing exercises, and engaging in social media. In addition to recruitment, she also screened and consented potential participants and assisted with assessments.
Funding Support:	Nothing to report
Name:	Holly Lubzik
Project Role:	Child Team Coordinator and Outreach Specialist through December 2019
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. Lubzik was the child team coordinator for the first quarter of Year 6 and also assisted with outreach and recruitment of participants.
Funding Support:	Nothing to report
Name:	Andrea Broadwater
Project Role:	Clinical Therapist through December 2018
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. Broadwater co-led two HFS groups during the first quarter of Year 5. She also assisted with community outreach and participant recruitment.
Funding Support:	Nothing to report

Name:	Ellen Hill
Project Role:	Research Assistant through December 2018
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. Hill assisted with study activities such as transcription and correction of qualitative interviews, literature reviews, preliminary analyses, community mapping, outreach mailings, mailing list updates, and administrative tasks.
Funding Support:	Nothing to report
Name:	Berkley French
Project Role:	Child Team Coordinator and Outreach Specialist through November 2018
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. French was the child team coordinator for the first quarter of Year 5 and assisted with outreach and recruitment of participants.
Funding Support:	Nothing to report
Name:	Erin Sorensen
Project Role:	Outreach Coordinator through October 2018
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. Sorensen was responsible for recruiting participants early in Year 5. She also screened potential participants and assisted with assessments.
Funding Support:	Nothing to report
Name:	Rebecca Couch
Project Role:	Outreach Coordinator through June 2018
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Until she resigned to spend more time with family, Ms. Couch was responsible for recruiting participants through establishing

	direct relationships with local and state-level military/veteran service organizations, attending community and military/veteran events, completing community mapping and canvassing exercises, and engaging in social media. In addition to recruitment, she also screened potential participants and assisted with assessments.
Funding Support:	Nothing to report
Name:	Chelsea Becker
Project Role:	Research Assistant during Year 4 through May 2018
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. Becker assisted with study activities such as transcription and correction of qualitative interviews, literature reviews, preliminary analyses, community mapping, outreach mailings, mailing list updates, and administrative tasks.
Funding Support:	Nothing to report
Name:	Jodi Goodman, MSW
Project Role:	Project Coordinator through April 2018
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Until resigning to pursue new career opportunities, Ms. Goodman was responsible for overseeing all aspects of coordinating the project, including tracking recruitment, conducting assessments, leading the children's group and supervising team members, coordinating training activities and group sessions, and coaching community providers.
Funding Support:	Nothing to report
Name:	Emma Steppe
Project Role:	Project Manager (CHCR) in Years 1-2
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	At CHCR, Ms. Steppe directed the technical implementation activities of the HFS mobile website and the administrative console.

Funding Support:	Nothing to report
Name:	Diane Egleston
Project Role:	Behavioral Scientist (CHCR) in Year 1
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	At CHCR, Ms. Egleston contributed to modifying the HFS program content for mobile website delivery.
Funding Support:	Nothing to report
Name:	Andrea van den Bruelle
Project Role:	Creative Design (CHCR) in Year 1
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	At CHCR, Ms. Van den Bruelle provided the artistic direction for the HFS mobile site, including the design, creation, layout, compositing, and production of graphical and media elements.
Funding Support:	Nothing to report
Name:	Anne Hathaway
Project Role:	Financial Coordinator in Year 1
Researcher Identifier	Not applicable
Nearest person month worked:	None for Year 7
Contribution to Project:	Ms. Hathaway was responsible for all accounting activities and maintaining compliance with budgetary requirements.
Funding Support:	Nothing to report

7.2. Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Nothing to report.

7.3. What other organizations were involved as partners?

Organization Name	Easterseals Michigan, Inc.
Location of Organization	Centerline, Southfield, Grand Rapids, Flint, Pontiac MI
Partner's contribution to the project	Facilities; Collaboration; Personnel. We have an MOU with Easterseals Michigan designating them as a network of community sites for dissemination of HFS. In Year 5, we added a new Easterseals site (Pontiac) and supported the first group there, which ended early in Year 6. We were in the midst of planning to launch a third group cycle at the Southfield site when stay-at-home orders began, leading to cancellation of the group. We have co-led and supported a total of seven group cycles at four Easterseals sites to date.

Organization Name	VFW National Home
Location of Organization	Eaton Rapids, MI
Partner's contribution to the project	Facilities; Collaboration; Personnel. We have an MOU with the VFW National Home designating them as a community site for dissemination of HFS. As of the end of Year 6, our team has co-led one group cycle on site with one of their staff members. The partners at the site remain engaged, and in our ongoing conversations with site leadership, we discussed recruitment and related topics. However, this site did not have enough potential participants to fill a second group before pandemic precautions halted in-person activities.

Organization Name	Michigan National Guard
Location of Organization	Lansing, MI
Partner's contribution to the project	Collaboration. We secured an MOU with the MING in the 4 th Quarter of Year 3 that continues to afford expanded opportunities for collaboration and partnership with the MING for participant recruitment. Since Year 3, the PI has been serving on the Community Health Promotion Council (CHPC) with the MING, which also bolsters the partnership. In Years 4–6, we expanded our partnership with chaplains and leadership of the MING, resulting in opportunities to conduct significantly increased outreach to military families. We expect to continue this relationship in ways that support recruitment and promote the program state-wide.

Organization Name	Community Mental Health Authority of Clinton, Eaton, and Ingham Counties
Location of Organization	Lansing, MI
Partner's contribution to the project	Facilities; Collaboration; Personnel. During Year 4 we secured an MOU with CMHA-CEI as a site for dissemination of HFS. Soon after, we co-led the first group cycle with one of their staff members. In Year 5, we co-led and supported the second group at the site, and in Year 6 we held the third group. Before the pandemic, we had been recruiting participants for this site and hoped to launch a fourth group cycle there.

Organization Name	St. Clair County Community Mental Health
Location of Organization	Port Huron, MI
Partner's contribution to the project	Facilities; Collaboration; Personnel. During Year 5 we secured an MOU with SCCCMH as a site for dissemination of HFS, our second community mental health site. We began targeted recruitment for this area in Year 5 and anticipated launching the first group cycle during Year 6 but the group did not fill before the pandemic.

Organization Name	Michigan Veterans Affairs Agency (MVAA)
Location of Organization	Lansing, MI
Partner's contribution to the project	Collaboration. During Year 6, MVAA partnered with our team to send a mass mailing to over 16,500 military and veteran families in Michigan with an HFS brochure and a letter about the program from the Director of MVAA.

8. SPECIAL REPORTING REQUIREMENTS

Quad Chart

HomeFront Strong: Building Resiliency in Military Families

Log #13046016 Defense Health Program (DHP)

W81XWH-14-1-0362

PI: Michelle Kees, PhD Org: University of Michigan Award Amount: \$3,519,174



Study/Product Aim(s)

Objective: Improve psychological health and adjustment in military and veteran spouses and children through HomeFront Strong (HFS), a resiliency intervention for military and veteran families in civilian communities.

Aim 1: Develop and field test a **mobile site** of HFS program content.

Aim 2: Train community clinicians to disseminate HFS at **8 community sites**.

Aim 3: In a quasi-experimental design, evaluate group vs. home/web-based HFS in a sample of **321 military and veteran spouses/partners** using an established risk/resiliency assessment (W81XWH-12-1-0419).

Approach

In a quasi-experimental design measuring effectiveness of the HFS intervention, military and veteran spouses/partners will self-select into 1) an HFS in-person group or 2) a web-based condition with HFS content only. Community mental health providers will be trained to co-lead groups at community sites, with data collected on fidelity to the model and implementation of the program to inform large-scale expansion.

HomeFront Strong Modules

Foster Resilience
Manage Stress
Cultivate Optimism
Rethink Thinking
Build Community
Allow Emotions
Stay Strong

8 sites

321 families

Impact for military spouses and children

Reduce:

- depression
- anxiety
- stress
- social isolation

Improve:

- coping
- family relationships

Accomplishments: COVID-19 restrictions impeded in-person activities in the later half of Y6 and Y7, but the web-based condition allowed ongoing recruitment, such that we reached a final sample of 319 participants enrolled. We successfully completed all three Aims of the project.

Timeline and Cost

Activities	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Aim 1: Develop and field test a mobile site of HFS program content.							
Aim 2: Disseminate HFS at 8 community sites.							
Aim 3: Evaluate HFS in a sample of 321 families.							
Estimated Budget (\$K) (direct + indirect costs)	760	942	947	870	NCXT	NCXT	NCXT

Y1 Goals – HFS web-based/mobile site

- ✓ Develop and field test web-based/mobile site
- ✓ Finalize HFS training and program materials

Y2-Y6 Goals – Community dissemination and HFS evaluation

- ✓ Recruit and train community providers in HFS
- ✓ Recruit and evaluate HFS participants on mental health and resilience

Y7 Goals – Community dissemination and HFS evaluation

- ✓ Recruit and evaluate HFS participants on mental health and resilience
- ✓ Final data analyses and dissemination of findings

Comments/Challenges/Issues/Concerns

The pandemic adds an extra layer of complexity to the final analyses (e.g. cohort effect), which we continue to explore with our statistician.

Budget Expenditure to Date (Y1 + Y2 + Y3 + Y4 + Y5 + Y6)

Projected: \$3,519,174 (Direct \$2,288,681; Indirect \$1,230,493)

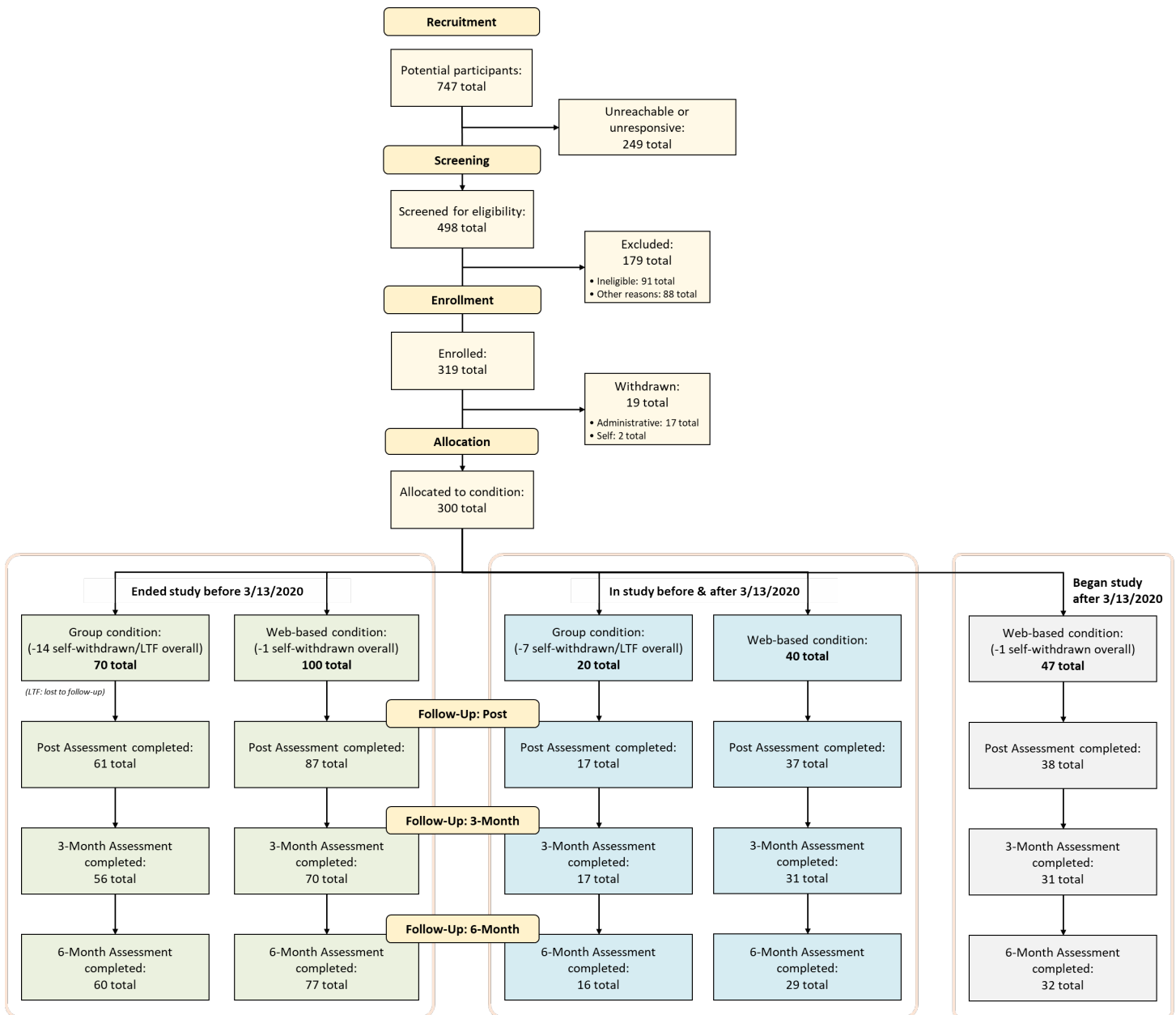
Actual: \$3,284,580.89 (Direct \$2,123,748; Indirect \$1,160,832)

9. APPENDICES

- A. Cumulative Recruitment Flowchart
- B. Projected-Actual Recruitment Graph

Appendix A

Cumulative Recruitment Flowchart, September 1, 2016–August 31, 2021



Appendix B
Projected-Actual Recruitment Graph
September 1, 2016–August 31, 2021

