

AWARD NUMBER: W81XWH-18-1-0235

TITLE: Psychological Health and Resilience through Values Affirmation:
Effectiveness of a Brief Intervention among Military Personnel

PRINCIPAL INVESTIGATOR: Ann H. Huffman, Ph.D.

CONTRACTING ORGANIZATION: Northern Arizona University, Flagstaff, AZ

REPORT DATE: July 2023

TYPE OF REPORT: Annual

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

DISTRIBUTION STATEMENT: Approved for Public Release;
Distribution Unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE July 2023		2. REPORT TYPE Annual		3. DATES COVERED 01Jul2022-30Jun2023	
4. TITLE AND SUBTITLE Psychological Health and Resilience through Values Affirmation: Effectiveness of a Brief Intervention among Military Personnel				5a. CONTRACT NUMBER W81XWH-18-1-0235	
				5b. GRANT NUMBER BA150565	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Ann H. Huffman, Ph.D., & Heidi A. Wayment E-Mail: ann.huffman@nau.edu				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) NORTHERN ARIZONA UNIVERSITY OFFICE OF GRANTS AND CONT. 601 S KNOLES DR ROOM 220 FLAGSTAFF AZ 86011-7034				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 long-range goal for this project is to improve the quality of life for military personnel. The objective of this proposal which supports the long-range goal of this project is to examine the effectiveness of a simple, non-spiritual, self-management strategy that strengthens personal and occupational resources-resources that can positively impact adverse reactions to military-specific demands and promote personal and work outcomes. Our intervention, designed to strengthen a balanced self-identity through very brief affirmations of growth and balance values, will be adapted to military occupational contexts. Within the context of Adler and Castro's (2013) Occupational Health Model for Military Mental Health, our central hypothesis is that a balanced self-identity will strengthen personal and occupational resources that moderate the relationship between demands and personal and work outcomes. The study was paused by the covid pandemic, and we are now focusing on an online version of the study.					
15. SUBJECT TERMS Military, wellbeing, intervention, balanced self-identity, app					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER (include area code)
Unclassified	Unclassified	Unclassified	Unclassified	14	USAMRDC

Table of Contents

	<u>Page</u>
1. Introduction.....	4
2. Keywords.....	4
3. Accomplishments.....	4
4. Impact.....	7
5. Changes/Problems.....	8
6. Products.....	9
7. Participants and Other Collaborating Organizations.....	10
8. Special Reporting Requirements.....	11
9. Appendices.....	12

1. INTRODUCTION:

The long-range goal for this project is to improve the quality of life for military personnel. The objective of this proposal which supports the long-range goal of this project is to examine the effectiveness of a simple, non-spiritual, self-management strategy that strengthens personal and occupational resources-resources that can positively impact adverse reactions to military-specific demands and promote personal and work outcomes. Our intervention, designed to strengthen a balanced self-identity through very brief affirmations of growth and balance values, will be adapted to military occupational contexts. Within the context of Adler and Castro's (2013) Occupational Health Model for Military Mental Health, our central hypothesis is that a balanced self-identity will strengthen personal and occupational resources that moderate the relationship between demands and personal and work outcomes.

2. KEYWORDS:

Military, wellbeing, quiet ego, intervention, growth, self-identity, balance, app

3. ACCOMPLISHMENTS:

What were the major goals of the project?

Phase II		
Aim 1: Examine the effectiveness of a brief, non-spiritual, self-management intervention on strengthening value balance.		
	Timeline	% complete
Major Task 4: Pilot Intervention Study	10-15	100%
<i>YEAR 1 Milestone: BRAVE Intervention Materials Developed</i>	MONTH 14	
Major Task 5: Preparation for Intervention Study	10-15	100%
<i>YEAR 2 Milestone: Setting and Materials for Intervention Study Ready</i>	MONTH 15	
Major Task 6: Beta testing of Direction Check (renamed) 1.0	10-13	100%
<i>YEAR 2 Milestone: Q-core 1.0 tested and ready for submission</i>	MONTH 13	
Major Task 7: Direction Check 1.0 prepare application	10-15	100%
<i>YEAR 2 Milestone: Q-core 1.0 submitted to Apple</i>	MONTH 15	

Phase III: UPDATED TIMELINES WITH NO COST EXTENSION		
Aim 2: Assess which factors moderate the relationship between the self-management intervention and organizational/personal resources.		
Aim 3. Investigate the impact of improved value balance on resources, and work and personal outcomes.		
	Timeline	
Major Task 8: Conduct BRAVE Intervention Studies (active duty, N = 200);	Nov 2023	10%

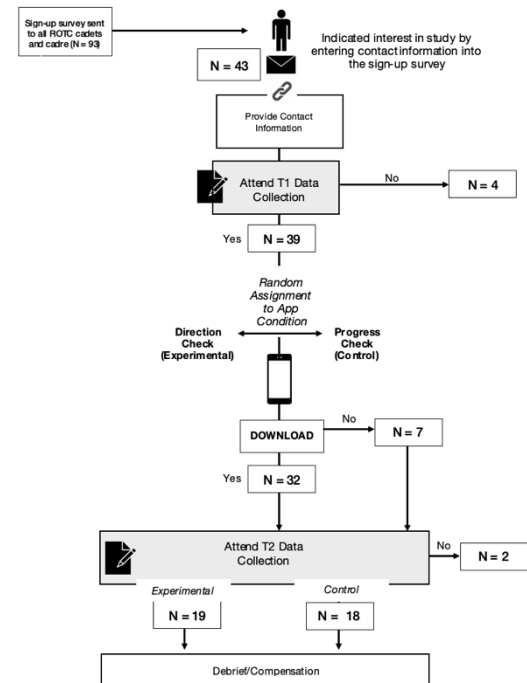
YEAR 2 Milestone: Studies 1 & 2 completed; Data ready for analysis	Nov 2023	
Major Task 9: Data Analysis		NA
YEAR 2 Milestone: Data analyzed	Feb 2024	
Major Task 10: Finalize Direction Check 1.1 (if necessary)	Feb 2024	NA
YEAR 2 Milestone: Beta version Q-Core 1.1 developed	Mar 2024	
Major Task 11: Beta testing of Direction Check 1.1(if necessary)	Mar 2024	NA
Major Task 12: Final Version of Direction Check prepare application for submission	May 2024	NA
YEAR 2 Milestone: Direction Check App tested and ready for submission	May 2024	NA
YEAR 2 Milestone: Direction Check App submitted to Apple	June 2024	NA

Summary of Major Task 8

Major Task 8: Conduct BRAVE Intervention Studies (active duty, N = 200);
YEAR 2 Milestone: Studies 1 & 2 completed; Data ready for analysis

Study Methodology

In Spring 2024 (January through March) an experimental study was conducted at two ROTC sites: Northern Arizona and Embry Riddle (ERAU, Prescott). IRB/HRPO was approved. Participants from each site were randomly assigned to condition. The data collection at each site was conducted in dedicated space. Participants completed the pre-intervention survey online prior to arrival. Once at the testing site, participants were greeted, provided a urine sample, completed the flanker task, and then were provided instructions (via a recording on a tablet) for their study tasks for the coming weeks. Participants also received several text reminders throughout the weeks to complete their modules and assignments. Regardless of condition, participants completed four modules of mini-lessons and then were asked to complete a post-test survey approximately 4 weeks later. Participants also returned to the testing site to complete the urine sample, Flanker task, and were debriefed and compensation arranged. The onsite visits took approximately 30 minutes to complete, pre- and post-surveys approximately 30 minutes each to complete, and the modules/exercises required about 60 minutes total over the course of four weeks. Consort diagram of participant recruitment and enrollment is on right.



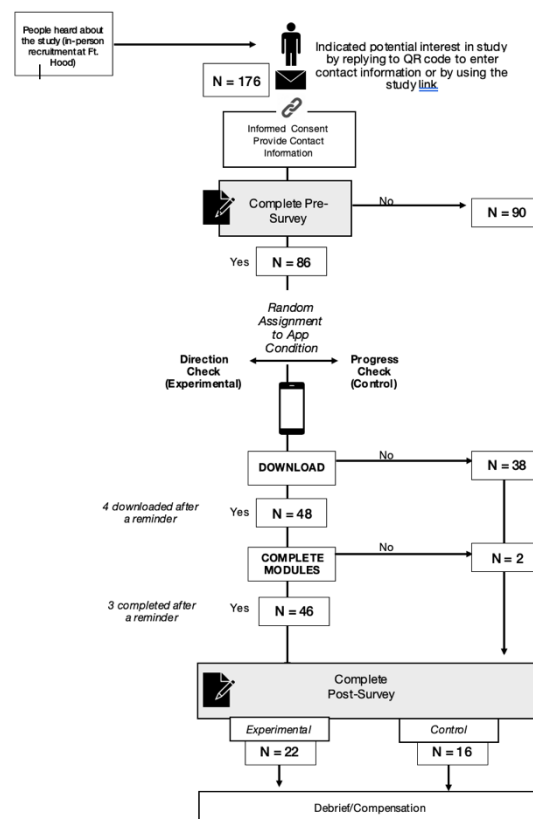
Recruitment plan/target

Online-Only Active Duty

Two recruitment locations at Fort Hood:

1) Ft Hood Reception Company. All incoming Ft Hood Soldiers report to the Reception Company for a week of classes. These classes provide Soldiers with an overview of Ft Hood, allow the receiving units time to ensure proper placement of incoming Soldiers into their units, and check the Soldier's financial and medical records. Two groups per week cycle through the center. Recruiting occurs through a brief introduction to the study where each eligible Soldier receives a flyer with a QR code to facilitate study participation.

2) Ft Hood People First Center (PFC). The PFC conducts immersive collective training to company, troop, or battery-sized intact units. Unit ladders receive additional training in ways to reduce harmful behaviors while building trust, cohesion, and lethality. Two companies/troops/batteries volunteer to attend a three-day Transformation Course at the PFC which completes their annual training requirement for classes in the prevention of harmful behaviors. Study recruitment occurs on the third day of the course for each of the two groups. Please see diagram below for Numbers in recruitment.



Current Recruitment Status

We have been working with the Department of the Army Security Guards Directorate of Emergency Services at Fort Cavazos, TX to set up a time to brief soldiers about study. We will be briefing soldiers the on November 8th (N = 250)

Remaining Items to Complete studies and Task 8.

1. Finish data collection for online study
 - a. Continue recruitment at Fort Cavazos

What was accomplished under these goals?

On-Campus Experimental Study with ROTC Cadets:

We completed the data collection for both the NAU and ERAU sites and participation was very good given the time frame between the pre- and post-test data collection periods (3 failed to complete post-test). We had the urine samples sent out for analysis and are waiting for data to return on the Flanker task.

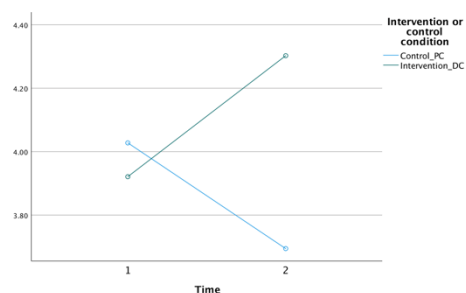
We completed some initial analyses to compare the ERAU and NAU samples and across conditions (pre-intervention). There were no significant differences on any of the primary study variables. Thus, we determine that randomization was successful across conditions within each university sample. The fact that the university samples did not differ is also a positive result.

We also have preliminary evidence from our manipulation check items that participants were paying attention to the content presented to them through the intervention content. The manipulation check consisted of eight items, four for the experimental condition content and four for the control condition content, and four filler items. All 12 items were presented together and participants could rate these

items regarding what they learned from the intervention. We averaged the relevant items to create three subscales (Direction Check subscale, Control subscale, Filler subscale). Participants in the intervention condition scored higher on the direction check-related subscale ($M = 4.17$) compared to the control subscale related ($M = 3.72$) and the filler subscale ($M = 3.84$). Participants in control condition scored higher on the control subscale ($M = 4.18$) compared to the direction check related subscale ($M = 3.88$) and the filler subscale ($M = 3.85$).

Analyses on primary variables of interest were to examine if the experimental group, compared to controls, increased on key predicted outcomes over time (from pre-intervention to post-intervention). Repeated measures ANOVA was performed for ten principal measures (one-tailed). We found support for our hypothesis for improvements on five of the ten outcomes (in order of strength): **coping support**, $F(1,35) = 12.10$, $p = .0005$, **compassionate goals**, $F(1,35) = 3.034$, $p = .045$, the **quiet ego** scale, $F(1,35) = 5.86$, $p = .042$, **affective commitment** (to job), $F(1,34) = 2.57$, $p = .059$, and a trend for **reappraisal coping**, $F(1,35) = 1.57$, $p = .109$.

No changes between intervention and control group over time on the use of **self-image goals**, $F(1,35) = .734$, $p = .199$. There was a significant time effect such that both groups used self-image goals more over time, $F(1,35) = 6.03$, $p = .019$, two-tailed. Unexpected effects: **Resilience** significantly decreased for both groups over time, $F(1,35) = 9.28$, $p = .004$, two-tailed and **anger** increased, $F(1,35) = 4.02$, $p = .053$, two-tailed. No effects for **rumination** or **spiritual fitness**



Online Study:

We actively have started our online data collection through May 2023 (due to app update needs and staffing had to pause during summer 2023) and will start back up in September. We were able to complete on site data collection with ROTC (allowing for collection of pre-post urine samples and performing the go-no go cognitive focus task (Flanker). We will be reviewing the data to ascertain if we need to make any adjustments for the Fall data collection. We continue to update the app as needed. Administratively, we have submitted our continuation IRB paperwork, and also an additional one year no cost extension.

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

Nothing to Report.

How were the results disseminated to communities of interest?

Initial results related to changes in work-family experiences were presented at the American Psychological Association 2022.

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

We are going to focus our data collection efforts at Fort Cavazos (previous Hood) so we can complete our data collection.

4. IMPACT:

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

Nothing to Report.

What was the impact on other disciplines?

Nothing to Report.

What was the impact on technology transfer?

Nothing to Report.

What was the impact on society beyond science and technology?

Nothing to Report.

5. CHANGES/PROBLEMS:**Changes in approach and reasons for change**

There have been no major changes in the actual delivery of the main intervention study online since the last yearly report. One potential problem is that, based on our data we have collected thus far, we are finding that some of the participants are not finishing the study. We are developing a plan such that there will be at least one zoom meeting during the study to increase motivation to finish the study.

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

Anticipated Problem 1: Although our recruitment success has increased, a continued anticipated problem is recruitment.

Plans to resolve: After having success at Fort Hood (now Fort Cavazos) pre-covid, we have gone back and started focusing there for our online study. To increase recruitment numbers we will (a) hire a part-time recruiting consultant there to act as a liaison with key installation leaders; and (b) will visit with key stakeholders on site in order to secure cooperation for email communication/ recruitment of potential participants. For example, we have been in contact with the commander in charge of the guard training classes, a training that is attended by a large number of soldiers. We have permission to advertise the study with this group of soldiers in November 2023.

Anticipated Problem 2: Participants not completing the full study.

Plans to resolve. The online study has had little interaction with the participants (except maybe during the recruitment time). For our next data collection, we are developing a plan to have at least one zoom check-in with study personnel during the study. We hope that this will provide more motivation for the participants to complete the study. In the online study there seems to be two stages in which participants are not continuing in the study. The first wave of attrition occurs right after volunteering for the study. We found that a little less than half of the participants who volunteer for the study complete the initial study components (informed consent, survey). The next stage that there is drop off is when participants are asked to download the app. At this stage, approximately 42 % of the participants do not download the app, despite multiple reminders. For our next phase of data collection, we are developing some strategies to get better retention in our study (e.g., provide

opportunity for zoom meeting to support any download issues, the time to complete the app to keep the soldiers in engaged.).

Changes that had a significant impact on expenditures

Nothing to report at this time.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

- **Significant changes in use or care of human subjects**

Nothing to report.

- **Significant changes in use or care of vertebrate animals.**

Not applicable.

- **Significant changes in use of biohazards and/or select agents**

Nob applicable.

6. PRODUCTS:

Publications, conference papers, and presentations

Taylor, Z., Parker, A., Robles, J., Huffman, A. H., & Wayment, H. A. (2021). *An Initial Examination: Military Personnel's Work-Family Conflict Before and During the Pandemic*. Poster accepted to the America Psychological Association Annual Convention, Virtual.

Journal publications.

Nothing to report.

Books or other non-periodical, one-time publications.

Nothing to report.

Other publications, conference papers, and presentations.

Website(s) or other Internet site(s)

Nothing to report.

Technologies or techniques

Nothing to report.

Inventions, patent applications, and/or licenses

Nothing to report.

Other Products. Nothing to report.

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Name: *Ann Huffman, Ph.D.*
Project Role: *Co-PI*
Researcher Identifier (e.g. ORCID ID): <https://orcid.org/0000-0002-7434-571X>
Nearest person month worked: *2 months*
Contribution to Project: *Dr. Huffman has performed work in the area of app content development, contacts for recruitment, HRPO paperwork, development of interview protocols, supervision of research coordinator and Research Assistant,*

Name: *Heidi Wayment, Ph.D.*
Project Role: *Co-PI*
Researcher Identifier (e.g. ORCID ID): <https://orcid.org/0000-0001-5287-5966>
Nearest person month worked: *2 months*
Contribution to Project: *Dr. Wayment has performed work in the area of app content development, app organization and management, NAU IRB paperwork, development of initial protocols, liaison with App developer*

Name: *Kevin Geoghegan*
Project Role: *Graduate Assistant*
Researcher Identifier (e.g. ORCID ID): *NA*
Nearest person month worked: *1 month*
Contribution to Project: *Kevin has been supporting recruitment of military personnel and related advertising.*

Name: *Dylan Bilyeu*
Project Role: *Research Associate*
Researcher Identifier (e.g. ORCID ID): *NA*
Nearest person month worked: *1 month*
Contribution to Project: *Dylan has been supporting recruitment of military personnel and related advertising.*

Name: *Zachary Taylor*
Project Role: *Research Associate*
Researcher Identifier (e.g. ORCID ID): *NA*
Nearest person month worked: *1 month*
Contribution to Project: *Zachary has been supporting setting up lab study and updating material*

Name: *Ryan Shallcross*
Project Role: *Research Associate*
Researcher Identifier (e.g. ORCID ID): *NA*
Nearest person month worked: *1 month*
Contribution to Project: *Ryan has been supporting recruitment of military and other key needs of project. .*

Name: *Rebecca Pax*
Project Role: *Research Associate*
Researcher Identifier (e.g. ORCID ID): *NA*
Nearest person month worked: *1 month*
Contribution to Project: *Rebecca has been supporting recruitment of military and other key needs of project.*

Name: *JP Bonn*
Project Role: *App Developer Consultant*
Researcher Identifier (e.g. ORCID ID): *NA*
Nearest person month worked: *as needed*
Contribution to Project: *JP has been working on app development.*

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.

What other organizations were involved as partners?

Nothing to report.

8. SPECIAL REPORTING REQUIREMENTS

- **COLLABORATIVE AWARDS:**

Not applicable

- **QUAD CHARTS:**

Quad chart attached.

9. APPENDICES

Appendix A – Quad Chart

Psychological Health and Resilience through Values Affirmation: Effectiveness of a Brief Intervention among Military Personnel



BA150565
W81XWH-18-1-0235

PI: Huffman/Wayment

Org: Northern Arizona University Award Amount: 1,410,601

Study/Product Aim(s)

Aim 1. Examine the effectiveness of a brief, non-spiritual, self-management intervention on strengthening value balance.

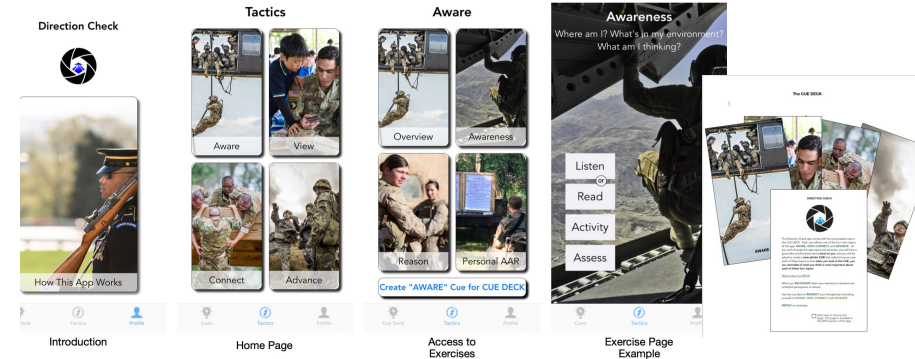
Aim 2. Assess which factors moderate the relationship between the self-management intervention and organizational/personal resources.

Aim 3. Investigate the impact of improved value balance on resources, and work and personal outcomes.

Approach

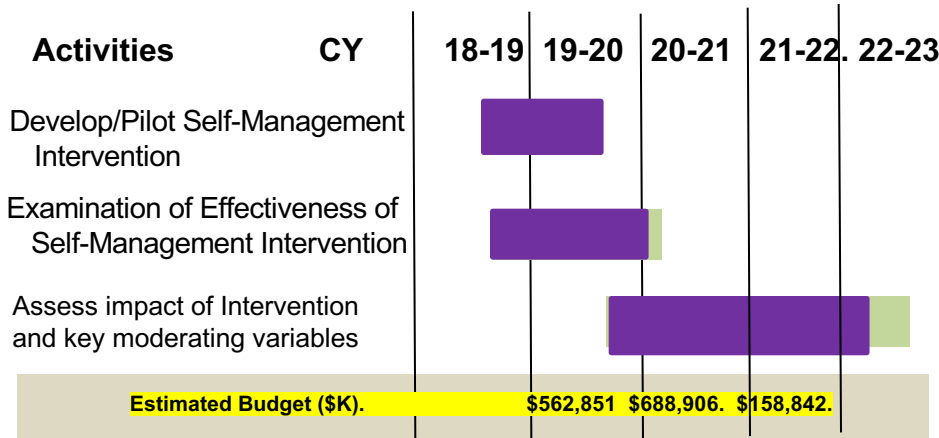
In a three-phased study, we will experimentally examine how well our adaptation of an intervention strengthens personal and occupational resources in a military occupational setting. Phase I and II consist of refinement of intervention, focus group and beta testing of phone app (Q-Core 1.0). In phase III two studies (pre-test post-test control group design) will be implemented.

Our app-based intervention to strengthen a balanced self-identity overcomes past issues with stigma associated with traditional medical models by focusing on self-reliance and personal growth. Screen shots from our developed Direction Check App below:



Accomplishment: App was successfully used in experimental conditions.

Timeline and Cost



Updated: (July 2023)

Goals/Milestones

- CY18 Goal – Develop/Pilot Self-Management Intervention
- CY19 Goals – Examination of Effectiveness of Self-Management Intervention
- CY20/21 Goal – Experimentally assess impact of Intervention and key moderating variables using online study protocol (altered)
- CY 22/23 Goals – Complete data collection, analysis and reporting.
- CY 23/24 Goals** – Complete study, final report.

Comments/Challenges/Issues/Concerns

Challenge: Data collection temporarily halted March 2020-January 2022. Completion of full study by participants.

Budget Expenditure to Date

Projected Expenditure: ~\$1,410,000
Actual Expenditure **\$1,235,575**

APA 2021 Poster Presentation

An Initial Examination: Military Personnel's Work-Family Conflict Before and During the Pandemic

The COVID-19 pandemic has negatively affected the work-life experiences of many workers (Trougakos et al., 2020), to include military personnel. Understanding work-family conflict (Greenhaus & Beutell, 1985) is particularly important for military members because they experience both common (e.g., workload, Britt & Dawson, 2005) and military-specific work-life stressors (e.g., deployment/family separation, Andres, 2014). Using the rational view (Gutek et al., 1991) as a framework, we investigated the role that COVID-19 has on military personnel's experiences of work-to-family conflict (work demands interfering with family responsibilities; WFC) and family-to-work conflict (family demands interfering with work responsibilities; FWC).

We argue that pre-pandemic, military members experienced the “normal” military workfamily stress (e.g., less predictable hours) with more opportunity for work to interfere with family and less opportunity for family to interfere with work (Fisher et al., 2020). During the pandemic, the level of work demands decreased in the work domain, yet the level of family demands potentially increased due to factors such as increased time at home, increased time that children were at home and COVID-19 health anxiety (Kramer & Kramer, 2020; Prime et al., 2020; Trougakos et al., 2020) suggesting that WFC would decrease from pre- to during-pandemic (Hypothesis 1) and FWC would increase from pre- to during-pandemic (Hypothesis 2).

Method and Results

The study was part of a larger study that examined a self-management tool designed to decrease work and family stress. Participants (N=24; 44% women, 52% white) were soldiers on a large Army installation who completed a survey pre-pandemic and during-pandemic (after US declared a national emergency March 13, 2020). Results revealed no differences for from T1 to T2 for time-based WFC, T1:(M=3.41, SD=1.28), T2 (M=3.12,SD=1.34), $t(21)=.748$, $p=.463$, 95% CI[-.54,1.21], $d=.159$, or strain-based WFC T1: (M=3.29,SD=1.29), T2:(M=2.95,SD=1.29), $t(21)=.794$, $p=.436$, 95% CI [-.51,1.09], $d=.169$, providing no support for hypothesis 1. Yet, support for hypothesis 2 was found such that time-based FWC at T1 (M=2.36,SD=.90) was significantly lower than time-based FWC at T2 (M=3.65,SD=1.34), $t(21)=-3.93$, $p<.01$, 95% CI[-1.97,-.61], $d=-.838$ was large. Similarly, strain-based FWC at T1 (M = 1.77,SD = 0.99) was also lower than strain-based FWC at T2 (M=3.88, SD=.1.36), $t(21)=-5.52$, p

Discussion

These findings provide insight into how large-scale events, such as the current pandemic, can impact the balance of work and family. The results indicate that in extreme cases, workers' FWC can match the levels of WFC, suggesting the need for changes in support mechanisms and a reexamination of the role that FWC could play in workers' wellbeing. Although we were able to capture soldiers' work-family experiences pre- and during the pandemic, there were some limitations (small sample, part of intervention study). Despite these limitations the present study, this is one of the few studies that was able to capture key work-family experiences of military

member in the context of a global pandemic, and provide researchers and practitioners with insight on how work-family conflict can change when military members are exposed to a major world crisis.