

INDEPENDENT *but not* ALONE

A JOURNEY TO FINDING BALANCE FOR MILITARY SPOUSES

Independent: Creating a healthy, thriving community of military spouses Final Report

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I. Summary of activity

The overall objective of this project was to create a comprehensive web-based health promotion program for military spouses. Prior to developing the program, our group conducted extensive formative work, including a series of focus group sessions to learn more about military spouses' greatest health-related barriers (early focus groups) and gather feedback on proposed intervention activities (later focus groups). This led to the development of a 10-week web-delivered program called *InDependent but not alone: A journey to finding balance for military spouses*. When we applied for funding for this project, we planned to have the program focus primarily on physical activity and healthy eating, but we learned during the focus groups that emotional and social well-being are the top priorities for military spouses. This led us to partner with Danielle Corenchuk, a military spouse and certified life coach with 20+ years of experience working with military spouses. In the final program, about 60% of the content was devoted to Danielle's personal development coaching, and the remaining 40% addressed diet and physical activity.

The primary aim of the engaged work was to partner with Fort Riley to make the intervention available to benefit military spouses in our community. However, we also had a research aim to evaluate the effectiveness of our program in comparison to a program that is currently available to military spouses. We used the website Operation Live Well (<https://health.mil/Military-Health-Topics/Operation-Live-Well>) as a comparison program, and recruited spouses not stationed at Fort Riley to complete a 10-week program that directed them to the information and resources available on the Operation Live Well website. Participants in both groups completed a series of questionnaires to report on key outcomes of interest to us, including stress, depression, anxiety, loneliness, self-esteem, self-efficacy, social support, and physical activity. To evaluate the effectiveness of our program, we evaluated changes in these outcomes from pre- to post-intervention and compared the magnitude of these changes between groups.

I.a. Project Partners

Prior to applying for and receiving this Engagement Incentive Grant, we (Dr. Mailey and Dr. Irwin) were approached by Michele Bradfield, a military spouse and the director and co-founder of the non-profit organization InDependent. Michele had launched InDependent in 2013 because she recognized that most military spouses were putting their own health on the backburner to take care of others' needs. She and her team wanted to develop a resource that would empower spouses to prioritize their own well-being by connecting them to local health and wellness resources and offering virtual and in-person wellness

programs. At the time our partnership with Michele began, the InDependent website was primarily an informational resource, and our goal was to develop an engaging, comprehensive wellness program in which spouses could enroll. In addition, we wanted the program to reach spouses who were not already inclined to be healthy; in other words, those who would have the most to gain from a health promotion program.

We worked closely with a variety of university, community, and military partners to develop and promote the project. At the university level, we worked with Dr. Briana Goff and Art DeGroat to develop recruitment strategies. Dr. Goff works extensively with military families and helped promote our program at all of her scheduled events. Art DeGroat put us in touch with several military spouse leaders in the community, who helped connect us with a variety of formal and informal networks through which Fort Riley spouses engage and interact. Additionally, Jill Joyce, a military spouse, registered dietician, and doctoral student in Nutritional Sciences, partnered with us to develop all of the nutrition content for the intervention.

Jill Joyce, Danielle Corenchuk, and Michele Bradfield were integral military spouse partners for the project. Danielle developed a substantial portion of the intervention content, and Michele and her team took the lead on designing all of the materials participants received, many of which were branded with the *InDependent but not Alone* (IBNA) logo. Danielle, Michele, and Jill were instrumental in ensuring the intervention content was tailored to military spouses, and also in connecting us with the appropriate individuals on post to promote the study. With their help, we were able to distribute information about the study through events and groups on post such as the monthly FRG Round-Up, the Army Wellness Center, and the Fort Riley Spouses Club.



The IBNA team: Jill Joyce, Danielle Corenchuk, Emily Mailey, Michele Bradfield, Brandon Irwin

I.b. Overview of InDependent but not Alone (IBNA)

Based on our previous research experience and the information gathered during our focus groups, our overarching goal for the IBNA program was to develop an engaging, interactive program that would empower Fort Riley spouses to prioritize their own health and well-being. To support this goal, our specific aims were to promote holistic wellness (encompassing physical, emotional, and social well-being), to facilitate peer-to-peer support among military spouses, and to encourage them to make small, feasible changes to benefit their health. To facilitate social support, all individuals who enrolled in the program were placed on a team with 4-6 other spouses. Each team had a captain, whose role was to motivate and encourage her teammates, and to gather information about their weekly accomplishments. Each week participants were challenged to complete 3-5 “mini-tasks” that pushed them to make small behavior changes related to diet, physical activity, social connection and personal growth. For example, one week they were challenged to replace one sugar sweetened beverage with water each day (diet), go for a 10-minute walk (physical activity), meet up with their teammates (social), and write down ten things they are grateful for (personal growth). At the end of the week, participants would report the number of tasks they completed to their captain, who would report the team score back to the research team.

The program began with a live kick-off event. All participants were invited to attend this in-person event as an opportunity to meet the IBNA team, learn about the 10-week program, and interact with their teammates and other program participants. Though we spent some time going over the nuts and bolts of the program during the session, our primary goal was for the participants to have fun, get to know each other, and get excited about the program. Thus, a substantial portion of the kick-off event was devoted to team building activities such as guiding blindfolded teammates through the crowded room and using fruits and vegetables to construct “food animals” with their teammates. Team members also exchanged contact information and developed a plan for communicating with each other. At the end of the kick-off, all participants received a bag of goodies to be used throughout the intervention, including a reusable shopping bag, a blank journal, a magnetic white board, a magnetic shopping list pad, a mouse pad, headphones, and a KIND bar. The bag, journal, white board, and pad were all custom printed with the IBNA logo and/or slogan.



Team building activities during the kick-off event

Following the kick-off event, the remainder of the program was delivered virtually. All of the intervention content was available online in weekly modules housed on Canvas. We used the “free for teachers” version of Canvas so that all content would be secure and password-protected, but participants would not need a K-State ID to log in. The primary method of delivery of intervention content was through podcasts, which are described in section II.a below.

The comparison program, Operation Live Well, was also delivered via Canvas. Our graduate and undergraduate students sifted through the abundance of information available on the Operation Live Well website and created weekly modules with 3-4 relevant links to topics available on the website, including integrative wellness, mental wellness, nutrition, physical activity, sleep, and tobacco-free living. The modules included vague prompts to “think about how you can apply this information in your own life,” but did not promote the same level of reflection and engagement as the IBNA activities. Both groups, however, had access to discussion boards on Canvas that they could use to communicate with all other participants in their respective conditions.

We used a variety of strategies to promote the program and entice spouses to sign up. For the comparison group, we primarily used social media and posted blurbs about the study on the spouses/wives Facebook pages of various military installations throughout the United States. For the IBNA group, we posted information about the study on Facebook pages specific to Fort Riley, such as the Fort Riley Spouses Club page. We advertised the study to K-State students and staff through the K-State Today daily email. We also attended several monthly FRG Roundup meetings and had a flyer about the program distributed through FRG leaders. We had flyers distributed on post via Army Community Services, Child & Youth Services, Housing Services, and the Army Wellness Center. We also relied heavily on “snowball sampling” by asking spouses who had enrolled in the program to invite their friends to participate. All advertisements directed participants to a registration page on the InDependent website: <https://in-dependent.org/milspojourney-registration/>

Ultimately, we enrolled two cohorts of participants in the study. The first program ran from April-June 2016, and the second ran from April-June 2017. In total, 119 Fort Riley spouses enrolled in the IBNA program, and 112 spouses stationed elsewhere enrolled in the comparison program.

II. Impacts of work

II.a. Intervention content: Podcasts and Workbook

This project yielded a large amount of web-based content which remains available online to everyone who participated in the study, and which we intend to use for future health promotion programs for military spouses. We decided to use podcasts as the primary mode to deliver intervention content. This allowed participants to receive the information in an engaging manner and access it anywhere and any time. Each of the ten weeks consisted of 3-5 podcasts: 1 about physical activity (delivered by Emily Mailey), 1 about diet (delivered by Jill Joyce), and 1-3 about personal development (delivered by Danielle Corenchuk). Thus, we developed approximately 40 podcasts total; most were 10-15 minutes in length.

An outline of podcast topics is included in the table below. We also developed a workbook that was available as part of the weekly online modules. Every podcast had a corresponding worksheet designed to stimulate participants to think about and apply the content to their own lives. All of the workbook content remains accessible online as well.

Week	Personal Development Topics	Nutrition Topics	Physical Activity Topics
1	What is Balance? Familiar and Unfamiliar	Nutrition Basics: Carbs and Proteins	Benefits of Physical Activity
2	Needs, Values, and Priorities	Nutrition Basics: Fats and Fluids	Aligning Physical Activity with Core Values
3	Doubt, Fear, and Limiting Beliefs Habits and Words	Food Journaling	Choosing the Right Activity
4	Internal Housekeeping Positive Self-Talk	Nutrition Goals	Physical Activity Goals
5	Goal Setting Mistakes Self-Confidence	Healthy Cooking Methods	Planning Physical Activity into your Life
6	Time Management	Meal Planning and Prep	Changing your Physical Activity Environment
7	Stress/Emotion Triggers Mindfulness	Disrupting Emotional Eating	Social Support for Exercise
8	Scarcity and Abundance Negativity and Positive Self-Talk	Healthy Party Dishes	Revisiting Physical Activity Goals and Barriers
9	Being True to Yourself Integrity and Assertiveness	Reading Nutrition Labels	Relapse Prevention
10	Communicating the New You	Food Safety	Closing Thoughts

II.b. Study results

Of the 119 participants who enrolled in the IBNA program, 80 (67%) completed the follow-up measures; of the 112 participants who enrolled in the comparison program, 75 (65%) completed the follow-up measures. Although we did not exclude males from participating, all participants were female. The demographic characteristics of all enrolled participants are presented by group in Table 1. The only significant difference between groups was that more Fort Riley participants had spouses that were currently deployed.

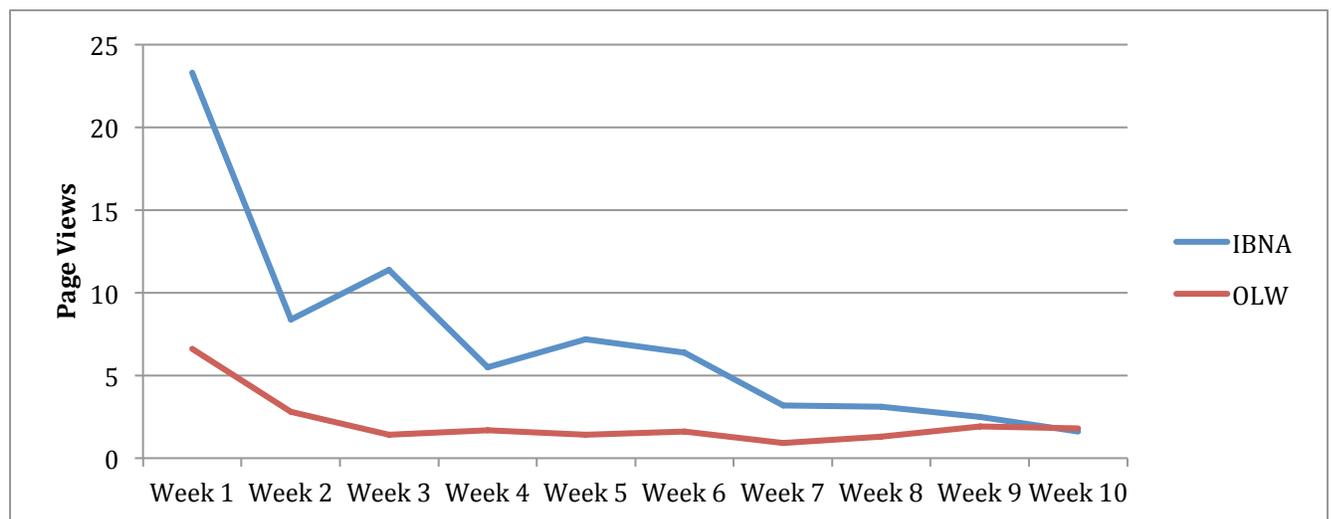
IBNA Group	Comparison Group
Female: 100%	100% female
Average age: 31.9 years	Average age: 33.1 years
White: 90.8%	White: 92.9%
College degree: 78.2%	College degree: 83.0%
Full-time employment: 30.3%	Full-time employment: 23.2%
Has children: 72.3%	Has children: 72.3%
Years married: 7.75	Years married: 8.31
Officer's spouse: 53.8%	Officer's spouse: 57.1%
Spouse deployed: 44.5%	Spouse deployed: 27.7%

II.b.i. Intervention effects on key outcomes

The primary analyses (examining changes from pre- to post-intervention) revealed a number of main effects in the hypothesized direction. Specifically, participants reported improvements in stress ($\eta_p^2=.26$; $p<.001$), anxiety ($\eta_p^2=.28$; $p<.001$), depression ($\eta_p^2=.27$; $p<.001$), loneliness ($\eta_p^2=.35$; $p<.001$), self-esteem ($\eta_p^2=.23$; $p<.001$), self-efficacy ($\eta_p^2=.13$; $p<.001$), and social support ($\eta_p^2=.17$; $p<.001$). Participants also reported increased use of strategies to manage stress ($\eta_p^2=.32$; $p<.001$). Contrary to our hypothesis, these effects did not differ between groups. In other words, the magnitude of improvement was similar for the IBNA and comparison groups. For physical activity, there were significant improvements in physical activity for transport ($\eta_p^2=.03$; $p=.04$), household physical activity (including gardening and yardwork; $\eta_p^2=.09$; $p<.001$), total moderate activity ($\eta_p^2=.02$; $p=.06$), and total overall physical activity ($\eta_p^2=.08$; $p=.001$) among all participants. Vigorous activity increased significantly in the IBNA group relative to the comparison group ($\eta_p^2=.03$; $p=.048$). There was also a nonsignificant trend favoring the IBNA group for leisure-time physical activity ($\eta_p^2=.02$; $p=.12$).

II.b.ii. Website use

Through Canvas, we were able to track website use by recording the number of “page views” each participant had per week. We expected website use to be higher in the IBNA group because the program was designed to be more involved and engaging for this group. Indeed, results showed the average number of page views per participant was significantly higher in the IBNA group (72.6) than the comparison group (21.3). However, as seen in the figure below, website use declined significantly across the 10-week intervention. This is a pattern that is commonly observed in web-based health promotion programs. One of our aims for this project was to determine whether we could promote sustained engagement through the weekly team challenges. We hypothesized that the social aspects of the program would make it more engaging, and the participants would feel compelled to remain actively involved to contribute to their teams. Ultimately, although this may have been the case for select teams, results showed this strategy was not effective for sustaining participation in the overall sample.



II.b.iii. Summary of results

Overall, although the improvements in a variety of mental health outcomes and health behaviors were encouraging, it was disappointing that the IBNA intervention, to which we devoted extensive time and effort to developing, did not perform better than a more basic, generic intervention. These findings might be attributed to the unexpected improvements reported by participants in the comparison condition. Previous research has demonstrated that simply providing information about health behaviors is not sufficient to produce significant changes, so we were surprised to see so many changes reported among those who received access to the program based on Operation Live Well. Several potential explanations for these improvements are: 1) participants who enrolled were highly motivated to invest in improving their health, 2) participants expected the program would lead to improved health, and thus reported as such, or 3) the discussion board allowed participants to connect with each other and receive social and emotional support that contributed to their mental well-being. Examining all results together, one possible takeaway is that such an extensive, involved program may not be necessary to promote health among military spouses. Perhaps simply developing something that is specifically for spouses, encourages them to prioritize their own health (including social and emotional health), and provides a forum for them to connect with and support each other, is sufficient. Of course, this study only examined the immediate short-term effects of the intervention. Whether these results would be sustained over a longer period of time is a question that warrants investigation in future studies.

II.c. Conference presentations

Thus far, data from this project have yielded three national/international conference presentations. I presented the results from Cohort 1 as part of a symposium on technology-based health promotion programs for women at the 2017 annual meeting of the Society of Behavioral Medicine in San Diego, CA. Additionally, my graduate student, Aaron Swank, presented results from the formative surveys at the same conference. Most recently, I presented on the most commonly reported barriers to health behaviors among military spouses at the International Society of Behavioral Nutrition and Physical Activity 2017 annual meeting in Victoria, Canada. My undergraduate student, Mia Taylor, also presented on this topic at the K-State Developing Scholars Symposium in April 2016. I plan to publish all of these findings in peer-reviewed journals and I currently have several manuscripts in preparation.

III. Self assessment of project

III.a. Challenges

One of the biggest challenges of this project was recruiting the military spouses the program was designed to benefit. Because we aimed to engage the full community of Fort Riley Spouses, all spouses were eligible to participate. However, we specifically hoped to recruit lower enlisted spouses, spouses of deployed soldiers, and spouses with limited motivation and/or resources to improve their health. Because this was our target population, we designed the content to be most relevant to unhealthy, unmotivated individuals. Nonetheless, as is common with any kind of health promotion program, many of the spouses who ultimately enrolled were already relatively healthy, or were highly

motivated to improve their health. This impacted the program in several ways. First, some results may have been subject to ceiling effects, such that individuals did not have much room for improvement if they were already in good health. Second, some spouses reported the content did not resonate with them because it was too basic. For example, the physical activity content was designed for individuals not engaging in any activity, and thus examples in the podcasts emphasized getting started and taking small steps such as accumulating 5 or 10 minutes of activity per day. We had a number of participants who were already running half marathons or marathons, and thus found there was little for them to gain from the information provided.

Another challenge was that military spouses tend to be stretched so thin that many of our participants said they simply could not fully commit to this program, despite their best intentions to do so when they enrolled. With any population, life gets busy and priorities can change over a span of several months, but our participants seemed to be especially inundated with demands and unexpected challenges, and the intervention we developed was perhaps not flexible enough to accommodate these challenges. We wanted the IBNA program to be comprehensive and meet the needs of a variety of spouses. The content spanned many topics in hopes that every participant would find something with which she could connect. Although this was a strength in some ways, in other ways it was a weakness, because many participants reported the amount of content was overwhelming to them. If they fell behind, they felt powerless to catch up, and in some cases discontinued their participation completely. With the second cohort, we made an effort to emphasize that they could complete the program at their own pace, and they should not beat themselves up if they did not listen to every podcast or complete every workbook activity. A number of participants thanked us for these comments, and said it helped them not experience undue guilt or stress related to completing the program.

We found that participants' overall enjoyment of and satisfaction with the program was heavily influenced by the success of their teams. Some teams clicked right away, met for a workout or a meal every week, and ended the program with great new friends. Others never met up or connected, either because they felt they had little in common, the logistics of meeting up proved to be too difficult, or multiple members of the team became disengaged. Often this led other members of the team to become frustrated and feel that they were missing out on a key aspect of the program. We tried to address some of these issues in the second cohort by asking more questions during the enrollment process about when and where participants would be available to meet up, the number and ages of their children, and using this information to create the teams. Overall, the teams' level of engagement and camaraderie seemed to be heavily dependent on the team captain. Captains were participants who volunteered to take on the role and received a brief (10-minute) training immediately following the kick-off event. While some individuals flourished in this role, others felt it was an added burden they were not prepared to take on. For future iterations of this program, our team should consider enrolling and training captains in advance to ensure they have the motivation and resources to lead their teams effectively.

Connecting with Fort Riley personnel to effectively promote the study proved to be somewhat of a challenge. Initially, to obtain IRB approval to recruit participants on post, we had to obtain a letter from Fort Riley permitting us to do so. This entailed many meetings with various personnel, who were somewhat reluctant to promote a program on post that was not developed by the Army. Ultimately, with the help of Dr. Goff and Art DeGroat, we were able to connect with the right people and gain their support and approval.

III.b. Successes

Through this project, I have learned so much about military life and the daily challenges military spouses face. They are truly the “rocks” that hold their families together, and mostly do so without any recognition or acknowledgment of their effort and sacrifice. Although some spouses connected with the content of the IBNA program more than others, they universally expressed appreciation for developing a program just for spouses. Their comments made it clear that hardly anyone had ever taken the time to ask them about their challenges and attempt to develop a program to help them.

Partnering with military spouses to develop and deliver the intervention proved to be critical. Although our formative work helped me learn a great deal about life as a military spouse, my perspective would never carry as much weight in the military community as someone who is living the lifestyle and truly “gets it.” The participants in the program appreciated that the program was developed primarily by military spouses, and would have been much less receptive to a program developed exclusively by K-State researchers with no firsthand experience of the military lifestyle.

The overall results were not as encouraging as we had hoped, but one of the most gratifying parts of this experience was hearing the individual success stories. Many spouses reached out to us to tell us how their participation in the program had changed their lives for the better, so we know we made a positive impact. From that perspective, I am thankful to have gotten involved in this line of research, and hope I can use the feedback from these participants, who in many ways were our guinea pigs, to modify and improve the program to continue to benefit military spouses in our community and beyond.

IV. Final budget

Item	Amount	Description
Gift cards – preliminary focus group sessions	\$1400.00	We conducted a total of 7 focus group sessions to gain a thorough understanding of the needs and barriers of the target population. The information gained from these sessions was invaluable as we developed the intervention. Attendance at the focus group sessions ranged from 2-8 participants, and all attending individuals received a gift card (typically \$30) to thank them for their time and contributions.
Food and supplies – kick off events	\$1300.00	We held a total of 4 in-person kick-off events (2 in 2016 and 2 in 2017). These were a chance to have the participants meet the staff and each other, provide an orientation for the 10-week program, and start the program on a positive, fun note. At the events, we had snacks and activities. We also rented tables and chairs, a projector, and a sound system.
Participant intervention materials	\$3600.00	Each participant in <i>InDependent but not Alone</i> received an intervention kit consisting of a reusable shopping bag, a blank journal, a magnetic white board, a magnetic shopping list pad, a mouse pad, headphones, and a KIND bar. The bag, journal, white board, and pad were all custom printed with the intervention logo and/or slogan.
Gift cards – final surveys	\$2900.00	For us to effectively evaluate the intervention, it was critical to have as many participants as possible complete the follow-up surveys. Thus, we incentivized participants from both groups with gift cards for providing complete follow-up data.
Miscellaneous supplies and postage	\$300.00	Miscellaneous costs included printing flyers, purchasing stamps for sending and receiving consent forms, and mailing intervention kits to participants who were unable to attend the kick-off event.
Total	\$9500.00	