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14. ABSTRACT
Purpose: To improve the quality of life of military family caregivers to help manage stress and cope better. Design: Feasibility study using RE-AIM framework and mixed methods to adapt

the evidence-based Stress-Busting Program to military context. Methods: Program content adapted to military context; 9-session intervention provided in small groups with two facilitators. Data collected at baseline, exit, and 2 months post-intervention, with interviews at one year post-intervention. Sample: Procedure: contact as many possible family caregivers of wounded warriors, self-identified as needing assistance with coping. Mostly female, White, and Hispanic spouses, 98 enrolled, 82 completed the intervention, 62 completed the full data collection. Analysis: Longitudinal cohort design using repeated measures. Because average scores of groups were not appropriate for analysis due to large variability of individual differences, each person served as own control; individual changes from baseline to post-intervention provided basis for assessment. Qualitative descriptive analysis of data collected on questionnaires, interviews, and facilitator notes. Findings: Caregivers reported study to be very effective; they acquired skills to change their behaviors, thinking, and family interactions, thereby improving their quality of life. It gave them permission to care for themselves; they shared these skills with their wounded warriors and family members. Caregivers had statistically significant decreases in perceived stress, depression, anxiety, and somatization; these findings were sustained two months post-intervention. A pattern of reduction in psychological symptoms was statistically significant at exit assessment and maintained at 2-month follow-up. Insomnia scores showed a statistically non-significant decline. Scores reflecting Spiritual Well-Being increased to statistical significance at 2-months. Implications for Military Nursing: Family members can be very stressed with caregiving responsibilities. This structured program, although time-intensive, provides remarkable improvement in coping abilities and behavioral change, which influence the warrior and family. Minimally, nurses should provide caregivers with understanding and support to assist them in caregiving responsibilities.

15. SUBJECT TERMS

military family caregivers, family interactions, caregiving responsibilities

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Abstract

Military Stress-Busting Program

Purpose: To improve the quality of life of military family caregivers to help manage stress and cope better.

Design: Feasibility study using RE-AIM framework and mixed methods to adapt the evidence-based Stress-Busting Program to military context.

Methods: Program content adapted to military context; 9-session intervention provided in small groups with two facilitators. Data collected at baseline, exit, and 2 months post-intervention, with interviews at one year post-intervention.

Sample: Procedure: contact as many possible family caregivers of wounded warriors, self-identified as needing assistance with coping. Mostly female, White, and Hispanic spouses, 98 enrolled, 82 completed the intervention, 62 completed the full data collection.

Analysis: Longitudinal cohort design using repeated measures. Because average scores of groups were not appropriate for analysis due to large variability of individual differences, each person served as own control; individual changes from baseline to post-intervention provided basis for assessment. Qualitative descriptive analysis of data collected on questionnaires, interviews, and facilitator notes.

Findings: Caregivers reported study to be very effective; they acquired skills to change their behaviors, thinking, and family interactions, thereby improving their quality of life. It gave them permission to care for themselves; they shared these skills with their wounded warriors and family members. Caregivers had statistically significant decreases in perceived stress, depression, anxiety, and somatization; these findings were sustained two months post-intervention. A pattern of reduction in psychological symptoms was statistically significant at exit assessment and maintained at 2-month follow-up. Insomnia scores showed a statistically non-significant decline. Scores reflecting Spiritual Well-Being increased to statistical significance at 2-months.

Implications for Military Nursing: Family members can be very stressed with caregiving responsibilities. This structured program, although time-intensive, provides remarkable improvement in coping abilities and behavioral change, which influence the warrior and family. Minimally, nurses should provide caregivers with understanding and support to assist them in caregiving responsibilities.

TSNRP Research Priorities that Study or Project Addresses

Primary Priority

Force Health Protection:	☐ Fit and ready force ☐ Deploy with and care for the warrior x☐ Care for all entrusted to our care
Nursing Competencies and Practice:	☐ Patient outcomes ☐ Quality and safety ☐ Translate research into practice/evidence-based practice ☐ Clinical excellence ☐ Knowledge management ☐ Education and training
Leadership, Ethics, and Mentoring:	☐ Health policy ☐ Recruitment and retention ☐ Preparing tomorrow’s leaders ☐ Care of the caregiver
Other:	☐

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Progress Towards Achievement of Specific Aims of the Study or Project

The purpose of the MSBP was to improve the quality of life of military family caregivers by providing a program that helped them manage their stress and cope with their lives.

1. Grant Management: Even until the very end of the grant, personnel turnovers and turmoil continued. The project coordinator, Martha Loomis, resigned in June 2013 and was not replaced. A doctoral student was hired to assist with data management. After she was hired it was determined that she would be unable to accept payment from the grant as she was on a stipend for her doctoral program. This, plus the loss of all personnel earlier than expected before the completion of the grant, left a significant surplus of funds to be returned to the funding source. In addition, the statistician suffered personal issues and did not complete the data analysis until May 2014.

2. Adaptation: The first year of the MSBP program was dedicated to addressing the first aim of the study to adapt the original SBP to meet military needs. Few and only very minor modifications have been necessary since.

3. Reach refers to recruitment, none of which occurred during this period

4. The adoption aim addresses organizations' willingness to accept the intervention. Both the military medical center and the VA were supportive of the program.

5. Implementation: We completed the intervention prior to this reporting period.

6. Effectiveness: Quantitative and qualitative analysis of effectiveness is detailed below.

Findings related to each specific aim, research or study questions, and/or hypothesis:
The purpose of the MSBP was to improve the quality of life of military family caregivers by providing a program that helped them manage their stress and cope with their lives. The means of accomplishing this was by determining the feasibility of adapting an evidence-based program (Stress-Busting Program for Family Caregivers of Person with Dementia (Lewis, Miner-Williams et al. 2009)) to the context of military caregivers. The RE-AIM framework (Kessler, Purcell et al. 2013) provided the organization for implementing the study. The specific aims were to 1) adapt the Stress-Busting Program to meet the needs of military caregivers, 2) Reach: Determine the extent to which the Military Stress-Busting Program (MSBP) attracts the intended participants, 3) Effectiveness: Determine the impact of the MSBP on quality of life of family caregivers, 4) Adoption: Assess the factors affecting the adoption of the SBP in the military setting, 5) Implementation: Assess the consistency of delivery of the SBP in a military setting, and 6) Maintenance: Determine the long-term impact of the intervention on individuals, as well as requirements needed by a military medical system to maintain delivery of the SBP to caregivers.

Field Code Changed

Field Code Changed

1. **Adaptation**: The program adapted well to the military context. The SBP for Caregivers of those with Dementia deals with stress management, primarily stress experienced by family caregivers. A strength of the program is that it discusses stress in the context of the daily life of the family caregiver. Adaptation was necessary, therefore, to convert the content referring to dementia to stressors experienced by military caregivers.

The handbook was revised to include working examples of caring for a wounded warrior and to use appropriate pictures. One session of the program was devoted to the primary stressor. The original text dealt with education on the challenging behaviors of a person with Alzheimer's disease. The title of this session became "Life After Injury" and dealt with secondary traumatic stress, ambiguous loss, changed family dynamics after injury, combat stress, effects of PTSD on family and helping a family member with PTSD, and understanding and managing another's anger behavior.

2. **Reach** refers to recruitment, or the ability to reach out to the target population, which was all family caregivers of wounded warriors in the San Antonio area. Recruitment demanded the most intense efforts of this study. These include efforts to reach the caregivers themselves, as well as what we call secondary recruitment, which is reaching out to people and organizations that help caregivers so that they can offer this information about the program.

Predictably, participant caregivers were predominately female (96%), mostly spouses (76%), and most with at least some post-high school education and who lived with their warriors. Most were White (60%) with over a quarter (27%) identifying themselves as being Hispanic. Close to two-thirds (59%) were unemployed outside of the home. Only two of the participants were active duty (Army, one National Guard) themselves. The warriors for whom the participants provided care were mostly Army (88%) and predominantly active duty (74%), with 48% having been junior enlisted at the time of injury and 40% being non-commissioned officers, averaging three deployments. This sample of military caregivers had a mean number of 2.5 children and a third of them maintained employment outside the home in addition to their caregiving responsibilities. Table 1 below provides these data stratified by participants in the original 9-week program and in the 9-session twice/week condensed program.

Table 1. Baseline Characteristics and Participant Flow for the Military Stress-Busters Program (broken out by total enrollment program length)

	All Participants (N = 98)	Long Program (N = 69)	Condensed Program (N = 29)
Age (in years), Mean ± SD	40.2 ± 11.6	40.7 ± 11.1	39.1 ± 12.7
Women, n (%)	94(96%)	67 (97%)	27 (93%)
Race			
White, n (%)	60 (60%)	37 (54%)	24 (77%)
Black, n (%)	8 (8%)	7 (10%)	1 (3%)
Hispanic/Latino, n (%)	27 (27%)	23 (33%)	5 (16%)
Native American, n (%)	1 (1%)	0 (0%)	1 (3%)
Asian, n (%)	1 (1%)	1 (1.5%)	0 (0%)
Unknown/Other, n (%)	1 (1%)	1 (1.5%)	0 (0%)
Participant Flow			
Enrolled, n	111	78	33
Early Dropout, n	13	9	4
Baseline, n	98	69	29
Attrition, n	16	14	2
Caregivers of Veterans, n (%)	13 (13%)	13 (19%)	0 (0%)
Number of Children, Mean ± SD	2.5 ± 1.8	2.2 ± 1.5	3.2 ± 2.2
Employment Status			
Employed, n (%)	33 (33%)	20 (29%)	13 (45%)
Unemployed, n (%)	58 (59%)	43 (63%)	14 (48%)
Retired, n (%)	7 (7%)	5 (7%)	2 (7%)
Relationship to Warrior			
Spouse	74 (76%)	55 (78%)	19 (66%)
Parent	22 (22%)	12 (17%)	10 (34%)
Other	2 (2%)	2 (3%)	0 (0%)
Number of Deployments, Median (n, IQR)	2 (n = 50, 1 to 4)	2 (n = 49, 1 to 3)	4 (n = 1, NA)
Rank of warrior at time of injury			
Junior Enlisted, n (%)	47 (48%)	33 (48%)	14 (48%)
NCO, n (%)	39 (40%)	28 (40%)	11 (38%)

Officer, n (%)	8 (8%)	4 (6%)	4 (14%)
Unknown, n (%)	4 (4%)	4 (6%)	0 (0%)
Military Status of warrior			
Active Duty, n (%)	72 (74%)	48 (70%)	24 (83%)
Reserves, n (%)	6 (6%)	5 (7%)	1 (3%)
National Guard, n (%)	9 (9%)	5 (7%)	4 (14%)
Unknown, n (%)	11 (11%)	11 (16%)	0 (0%)

Caregivers, with their very burdened lives, often tend to be reluctant to accept assistance for themselves. Murphy and colleagues (Murphy, Escamilla et al. 2007) identified six factors involved in the determination of caregivers to participate in intervention research: recognition of the need for help, expectation and motivation for change, recognized self-worth, recognition of benefits, the timeliness of recruitment strategies, and the support provided by research staff on recruitment and retention. These factors were evident in these caregivers, with the last two being extremely important in terms of both recruitment and retention.

Recruitment of caregivers for programs, as expressed by social workers at the Warriors in Transition Battalion (WTB), was difficult at SAMMC. The social workers shared the paradox they found in which caregivers asked for more support, yet less readily responded to the offer of programs designed for them. We found an antidote for this to be intense time and effort spent on recruitment, which evolved to be crucial to the success of this program.

Two issues were particularly critical in recruitment. The first was in the means of contact. We identified two means of recruitment: direct, in which potential participants themselves were contacted, and indirect, which involved referrals from others. Examples of the efforts made for *direct recruitment* included speaking at WTB monthly newcomer briefings, monthly SAMMC commander briefings, having a table at weekly bingo night at the Warrior and Family Support Center, distributing flyers, and briefing healthcare personnel about the program to encourage referrals. Caregivers rarely responded to the many flyers that we distributed in numerous places. Personal contact with the individual was most effective. However, when the researchers contacted caregivers personally, some would say that they recognized the program from the flyer. Hence, we believe that the flyers played a role in awareness of the program, which helped when the invitation to join the program was offered personally.

Indirect recruitment was the interaction with others, mostly SAMMC health care providers, in order to solicit referrals. Understandably, these referrals required a strong buy-in by the providers. In spite of the time we spent talking about the program and describing it as a potential resource of support for the family members, referrals usually occurred only when the providers personally experienced the change in the caregivers who participated in the program. The Traumatic Brain Injury Clinic was a strong supporter of the program, as were the social workers. Other providers were not nearly as forthcoming as we had hoped, with the case managers being the least helpful recruitment source, making very few referrals.

The second factor that was critical to recruitment was timing. Within the first year of the study, it became evident that the timing of when to approach family caregivers (in relation to when the injury occurred) affected both the entry into the intervention program and the ability to complete it. Family caregivers can definitely benefit from the stress management assistance during the treatment time of the injury (this statement being supported by qualitative data). However, the complexity and chaos of their lives often made it difficult for them to participate in the program in terms of both time and energy, and willingness. Recruiting caregivers too close to the time of injury resulted in multiple attritions. At least several months out from the injury, after most of the acute care was completed, caregivers seemed to be more receptive to and able to engage in the intervention.

It also became evident that family caregivers continue to experience stress years out from the injury. At this extended point, some are not only more willing to accept assistance from such a program when offered, but sometimes even seek out assistance, which is rarely seen in caregivers. Being familiar with the program from experience with the original SBP, the Caregiver Coordinator at the VA hospital requested that the VA caregivers be given the opportunity to participate. Approval of the amendment to include caregivers of veterans provided this interesting perspective about the timing of offering the program.

There has been a significantly higher withdrawal rate for participants of this study vs. the study with caregivers of persons with dementia. Much of this was due to the mobility of the military, as well as the complexity of their sudden lifestyle change secondary to the injuries. In addition, there were participants who consented but did not show up for the intervention or respond to attempts to contact them. When we recognized this pattern, we began to obtain written consent immediately prior to the beginning of the intervention (rather than a week or more earlier). This helped to decrease the initially high attrition rate.

3. The **adoption** aim addresses organizations' willingness to accept the intervention. Both the military medical center and the VA were supportive of the program. The intervention/program was well established and respected at SAMM-N, with some clinics referring potential participants based on the positive results seen in family member graduates of the program. The chief of the VA Poly Trauma Center Outpatient care indicated she would like the program to continue if it were provided. Social workers at the VA have expressed interest in being trained to deliver the program.

4. **Implementation**: This intervention, which had been successfully implemented in the context of caregivers of persons with dementia, required both a continuation of previous lessons learned, such as those concerning the facilitators, and some modifications for implementing this within the military context.

a. Facilitators

(1) Credibility. Experience with this military/veteran sample concurred with Murphy and colleagues' (2007) assessment that the support provided by research staff affected recruitment and retention. Qualitative data in this study indicated that the caring and interest of the facilitators were important benefits of the intervention. A screening criterion for facilitators was an affiliation with the military, which proved to be very helpful in both being able to address the concerns of the caregivers, and providing credibility with them. One facilitator, who subsequently became a project coordinator, was a counselor and a family caregiver graduate of the intervention prior to applying for the position. She was highly lauded by the participants

(e.g., “Until a mentor has been through it, you really can’t accept their help. That’s why Martha is so imperative for this program because she’s been in our shoes”).

(2)Training. Because of the breadth of material and the intensity of interactions, facilitating the intervention was a challenge. The requirement for two facilitators for each group was necessary to manage the questions and emotions that arose during group sessions. The ideal situation was having facilitators from different disciplines (e.g., nursing and counseling or social work), which allowed a broader background of knowledge to address the needs of participants. The MSBP group is not an educational class, nor a support group, nor a counseling session, but a compilation of these that required facilitators to have all of these skills, in addition to managing group dynamics. Training for facilitators was initially a one-on-one format, but because of turnover, we developed material for an 8-hour training course. Potential facilitators attended this training and observed one group before being able to co-facilitate a group.

b. Flexibility in provision of the program

Recruitment early into the study was among caregivers of those recently injured, many of whom were so unsure of their situation that they could not commit to nine weeks. After consulting the literature on the time required for cognitive behavior interventions, which we found to be most similar to this intervention, we applied for an amendment to offer the nine session of the program twice a week. During recruitment, we then offered the option for either the “long” format: 9 weekly sessions (original format) or the “short” format: 4 ½ weeks, twice-a week. When we started recruiting only those who were farther out from the time of injury, participant tended to prefer the long course and we eventually stopped offering the short format. Analysis of the results of persons in the long groups vs. the short groups provided interesting differences expounded upon below. Offering groups during the evening timeframe also proved helpful in allowing more people to participate.

5. **Effectiveness and Maintenance on the Individual Participants**: Caregivers who participated in this intervention study showed improvement in different measures of quality of life that either were sustained at the two-month follow-up or showed continued improvement. We attribute continued improvement after the intervention completion to the understanding that the participants internalized the self-care skills, which become more effective the more one uses them.

a. Quantitative Results: The perception of burden, or “subjective burden,” experienced by these caregivers remained constant during the intervention and increased at two months after the intervention. See Table 2 for the perceived sense of burden.

Table 2. Zarit Measure of Perceived Burden

Assessment	**N**	**Mean**	**SD**	**Min**	**Max**
Baseline	96	30.3	16.2	0.0	67.0
Exit	75	30.6	16.2	4	67
2-month	60	25.4	16.8	0	81

Yet, in spite of the continued stressful environment, repeated measures analysis indicated that over the course of the study caregivers had statistically significant decreases in perceived stress, depression, anxiety, and somatization that were sustained through the two-month follow-up. For all participants, the trend in perceived stress shows a statistically significant progressive decline from baseline through 2 months ($p < 0.001$). See Table 2.

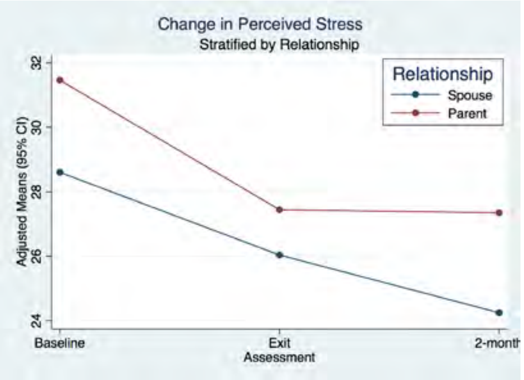
Table 2. Total Perceived Stress for all Participants

Assessment	N	Mean	SD	Min	Max
Baseline	98.0	30.0	7.8	12.0	47.0
Exit	68.0	26.0	8.2	7.0	46.0
2-month	54.0	24.2	10.9	5.0	56.0

Participants in the long program showed statistically significant decreases in perceived stress from baseline to exit ($p < 0.001$) and from exit to 2-month follow-up ($p < 0.018$). The short program group showed a statistically significant decrease at exit ($p = 0.005$). Although these latter caregivers showed a decrease in perceived stress between exit and 2-months, the additional decrease was not statistically significant. However, perceived stress for the short group at 2-months was statistically less than it was at baseline ($p = 0.006$).

Figure 1 shows the trends in perceived stress for parent and spouse caregivers. Parent caregivers ($p = 0.049$) and spouse caregivers ($p < 0.001$) showed a significant decline in perceived stress over the three assessments. The main effect for relationship ($p = 0.080$) and interaction between relationship and time were not statistically significant ($p = 0.746$), indicating that the apparent differences between parent and spouse caregivers were not statistically significant at any of the assessments.

Figure 1. Change in Perceived Stress Stratified by Relationship



Psychological States and Symptoms

Table 4 presents the detailed summary statistics for the psychological states and symptoms measures. (Note: There is a slight variability in the numbers reported for baseline, exit, and 2-month data collection due to some participants not filling out all the surveys.)

Table 4. Psychological States and Symptoms

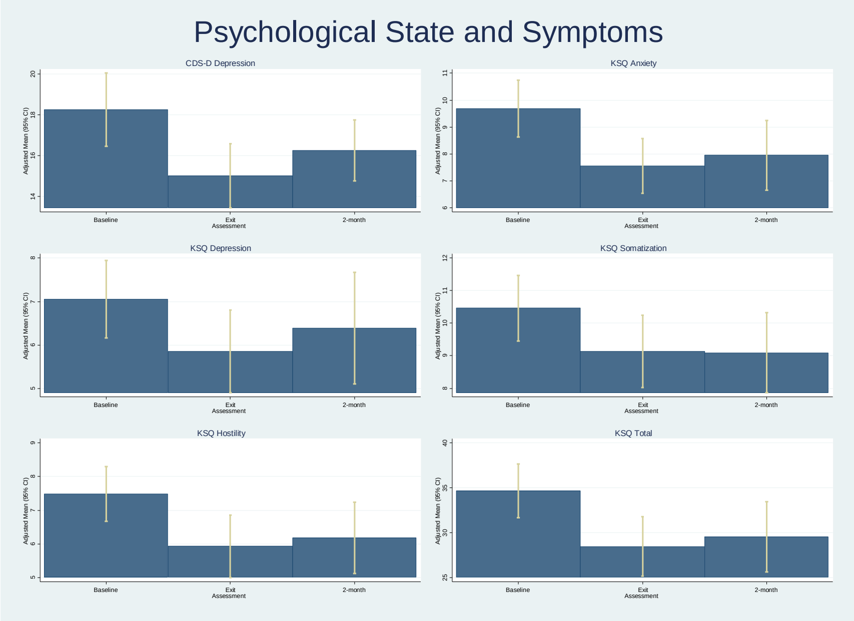
Assessment	N	Mean	SD	Min	Max
Total Depression Scores (CES-D) for all Participants					
Baseline	91	19.3	10.7	1	47
Exit	72	16.0	10.7	0	45
2-month	58	15.3	11.7	0	58
Anxiety Scores for all Participants					
Baseline	93	10.1	5.8	0	23
Exit	72	7.8	5.7	0	21
2-month	57	7.6	6.5	0	23

CES-D depression scores for all participants are significantly reduced at the exit interview ($p < 0.001$), and the reduction is maintained at the 2-month follow-up (vs. baseline, p 0.045). Higher levels of Sense of Coherence ($p < 0.001$) and Coping resources ($p = 0.045$) are associated with reductions in CES-D depression across the assessment periods (data not shown).

KSQ Anxiety symptom scores follow a similar pattern with a significant reduction in anxiety symptoms observed at the exit assessment ($p < 0.001$) that is maintained at the 2-month follow-up (vs. baseline $p = 0.025$). Higher levels of Sense of Coherence ($p < 0.001$) and Coping resources ($p = 0.017$) are associated with reductions in anxiety symptoms across the assessment periods (data not shown).

There was a pattern of reduction in overall psychological symptoms that was statistically significant at the exit assessment ($p = 0.001$) and was maintained at the 2-month follow-up ($p = 0.017$) (See Table 3).

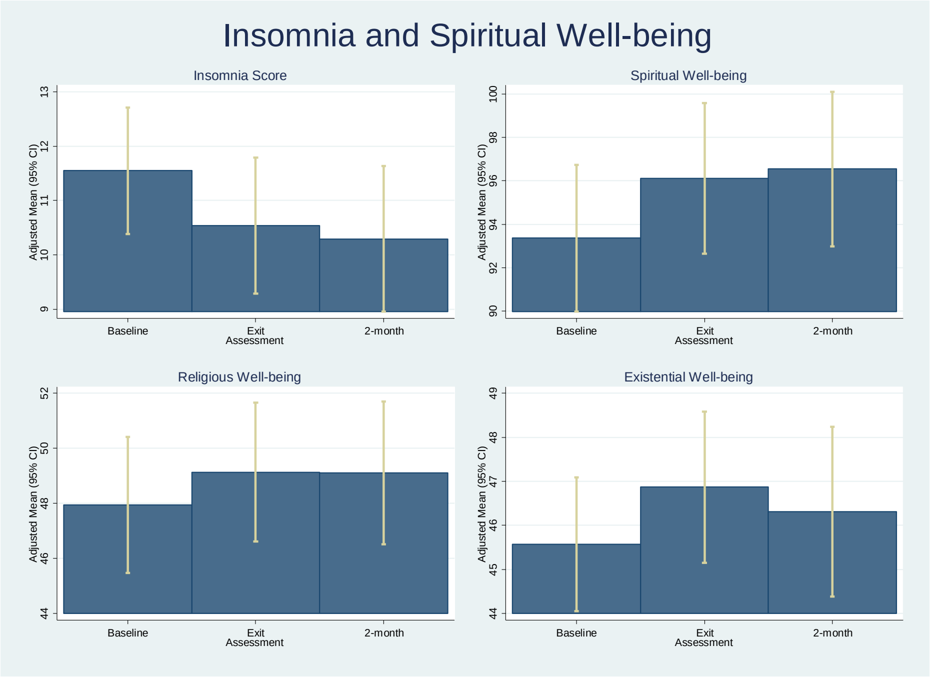
Table 3. Adjusted Means with their respective 95% CI for the Psychological State and Symptoms



Measures

Insomnia scores showed decline which was statistically non-significant, and scores indicating spiritual well-being increased at exit and continued to increase to statistical significance at the 2-month follow-up (p= 0.047). The latter instrument, Spiritual Well-Being, consisted of two measures, Religious and Existential. Understandably, the religious score showed little change. The change in the total score is primarily attributed to the increase in existential well-being, a topic of which was addressed in the program content~~.~~ (See Table 4).

Table 4. Adjusted Means with 95% Confidence Intervals for the Insomnia Index and Spiritual Well-Being Measures



The initial plan to use ethnicity, gender, and service status as independent variables was rendered moot with the homogeneity of the sample. Instead, we maintained the independent variable of relationship to the warrior (spouse, parent, or other) and added the unanticipated variable of the time periods in which the program was provided (weekly sessions for 9 weeks (“long”) vs. twice/week sessions over 4 ½ weeks (“short”). This latter variable emerged in response to the need of the sample population. Early on in the study, we found caregivers who were interested to participate but would not be available for the nine weeks. We amended the protocol to condense the program in order to include them (with the same content but sessions provided twice per week rather than once per week). Literature review at that time mostly addressed number of sessions rather than a time element. It seems, however, that the time period in which stress management skills were provided to this sample did affect results.

With data stratified according to the length of time spent with the intervention we found that participants electing the long program showed significant increases in the scores on the SF-36 Mental Component Score at both exit ($P = 0.008$) and the 2-month follow-up ($P < 0.001$) while participants in the short program showed some improvement that was not statistically significant at either the exit or 2-month follow-up. While as a whole participants showed little change in caregiver burden as measured by the Zarit Burden Scale, participants in the long program showed some decrease in caregiver burden at exit, but reported significant reductions in caregiver burden at the 2 month follow-up relative to exit ($P = 0.003$) and baseline ($P = 0.008$).

The significant increases in overall spiritual well-being for all participants reported above are primarily attributable to participants in the long group, as were the scores for measuring anxiety. The participants in the short group showed progressive decreases in anxiety but not of significance. Participants in the long group also showed progressive, although not significant, reductions in hostility. Participants in both groups showed progressive declines in perceived stress, but only those in the long group showed a significant reduction at the two-month follow-up. Participants in the short group, however, did significantly report an increase their ability to sleep upon exit of the program that they sustained at the 2-month follow-up.

b. Qualitative data were collected using multiple methods. First, open-ended questions were a part of each written questionnaire collection. Second, all participants were invited to participate in an end-of-intervention interview and several opted to do this. We also conducted interviews with six participants one year after completion of the intervention. Consistent with qualitative research methods, we used the purposeful sampling technique for these interviews. Last, the facilitators took notes of discussion during the sessions, with direct quotes as much as possible. The following is the analysis from these data.

The people caring for wounded warriors who participated in this study identified themselves as needing assistance with stress when they signed up for the program (“This whole situation is overwhelming”); yet, ironically, they sometimes had no idea how much stress they were in. “I didn’t know I was stressed until I read the second chapter” and “I thought I was fine but I realized [after doing the intervention] that I wasn’t dealing properly.” They were, by and large, a lonely, hurting, group of people who mostly didn’t feel worthy of taking care of themselves. In some cases, they didn’t know the depths of how much they were hurting. “…I was grieving and I wasn’t aware of it.” “I have reached emotions that I had stuffed down and didn’t know I did.”

When these caregivers were asked what was most helpful about the program, many described the benefits of interacting with a group of their peers. “Talk, talk, talk” was the abbreviated description of being given the time to “share,” “interact,” and “relate” with others who were “doing the same thing.” This time of coming together resulted in making connections, where they “formed a bond,” in “hearing different stories,” but most importantly of healing. Healing was evidenced by such statements that indicated that they found that they “were not alone” in “dealing with this mess,” in discovering that they were “normal,” and in being able to talk “instead of just keeping everything inside.” They found out that the feelings they were experiencing were “nothing to be shameful about.” For a few, it was a few hours of escape, “an hour or two without judgment.”

Benefits of program participation extended beyond the benefits of being in the group. This program, consisting of both the instructional content and the skill and care of the facilitators, was a time of growth in learning about oneself and to value oneself. They discovered their own self-importance that goes beyond seeing oneself “only as someone to be there for others.” “I actually love myself more!” This identification of self-value extended to recognition of the need to care for themselves - without “guilt” of being considered “selfish.” Some were able to further extend this to an understanding that “in order for you to be able to take care of your warrior you have to take care of yourself.” Interestingly, this comment was a direct quote of the facilitators, who reiterated this message week after week.

Nearly equal to the comments on the group benefits, were the remarks about what was learned about stress management and relaxation techniques. The program content included learning and practicing a relaxation technique at each group meeting, with the rationale that accumulating a bevy of techniques would allow participants to choose techniques that appealed to them and would be appropriate at different times. The basic relaxation technique, that of deep breathing, was the most frequently lauded as being helpful in dealing with stress and “help [them] calm down,” but different techniques appealed to different people. Differences in personality were highlighted in the responses to the different techniques, as some, such as aromatherapy and massage, enthusiastically approved by some, were noted as undesirable by others. The time spent in discussing and practicing coping skills was well spent as many caregivers addressed this specifically as being helpful.

Participants were asked to describe changes (if any) in how they cared for themselves after having finished the program. They described “physically feeling better,” but more talked about a better quality of life from the mental/emotional standpoint. There was an overall sense of being “more positive,” in accepting what can’t be changed, in understanding limits, and in a sense of calmness. “I was able to identify what I was feeling, when I didn’t know it myself. Trying to understand what emotion I’m feeling when I’m upset and then working through it.” “I feel so much better, more relaxed and more patient. I feel at peace. ☺”

Other changes they described involved behavior. Frequently participants noted change in how they now deal with stress (“When I get stressed out, I recognized the emotion, then stop to take a deep breath and think about it first instead of just letting myself get too worked up about it”). Other important changes involved adopting a healthier lifestyle through healthier eating, meditating, and in exercising.

Cognitive changes involved an improved ability to analyze situations, “hav[ing] a better perspective,” and recognition that they always have a choice. The comments about having a choice flowed directly from the oft-repeated statement by facilitators that we may not be able to choose our destiny in life, but we can choose how we cope with it. Cognitive support came from the CD and the DVD, but mostly the program manual that we provided for them. They recognized the manual as a powerful resource, and sometimes one that would be referred to in the future.

While the vast majority of comments were positive, a few caregivers either experienced no change, or refused to accept the message of the importance of self-care. “Time is the biggest factor. I want and need to attend [to] all of Keith’s [a pseudonym] doctors [ibid] appointments so I can keep him up to what the doctors want him to do and keep the doctors informed on what is going on with Keith.” One caregiver, recognized that while she initially thought she had not changed, realized that she had simply by answering the survey question. “Not really. (well, yeah). I see things in a different prospective way! [ibid] I see things with less stress.”

Others came into the program with doubts, but became believers. “At first this program seemed really cheesy, but I’m very glad that I did it.” Even family caregivers who were professionals, counselors, and nurses came into the program stating that they thought they should know this material but still emphasized how they learned from it.

Probably the most powerful outcome of participation in the Stress-Busting Program with these caregivers is that it affected more than the lives of the people who participated in the intervention, and the effects extended beyond the duration of the intervention. The program taught physical, spiritual, emotional, and cognitive skills that become stronger and more impactful the more one practices them. In addition, participants shared with us that they are sharing these skills with their warriors (“I showed my husband how to trust and relax”) and other family members, thus strengthening family dynamics. “Every day I am learning to deal with stress in the best ways to make things easier for myself and my family.” Many share the written materials with their warriors, claiming the written word is more credible than their simply telling them or that it gives the caregiver the forum to open a discussion about difficult topics. Changes in the caregivers affect changes in the family dynamics. “My family and I have been eating a lot healthier. We have an actual family night where we talk and watch movies.” “Things are less tense at home.”

Multiple caregivers recommended that the soldiers be allowed to participate in the program. Some even indicated it should be “mandatory.”

In summary, caregivers reported that the study was very effective in helping them acquire skills to change their behaviors, their thinking, and their family interactions, thereby improving their quality of life. It also gave them permission to care for themselves and, very importantly, they are sharing these skills with their wounded warriors and other family members, providing expanding, if unmeasured, benefits of the program.

6. Maintenance: In order for this program to be sustained within the facilities, administration would need to make a commitment to providing the resources. The financial commitment in terms of program administration would be fairly reasonable requiring only the cost of books and materials and a room commitment. More importantly would be the human resource requirement. Training of personnel (a 2-3 day process) would need to be maintained to allow for two facilitators for each group. The biggest commitment would be in recruitment, which was intensive and time-consuming. For as valuable as this program is to caregivers, caregivers as a group are reluctant to accept help for themselves. They will do so often only with persuasion and encouragement from someone who cares about their best interest.

Relationship of current findings to previous findings:

The intervention program in this study is a derivative work of the Stress-Busting Program (SBP) for caregivers of persons with dementia (Lewis, Miner-Williams et al. 2009). That study reported that the “results of the SBP indicate that caregivers have shown remarkable improvement in their ability to relax and manage stress. The SBP program has also resulted in significant decreases in stress, depression, and anxiety as well as enhanced quality of life. Caregivers report that the study was very effective in helping them to increase their sense of self-control and giving them permission to take care of themselves.”

Specifically, measurement results were that

"1. At study entry caregivers (as compared to non-caregiver controls) had significantly higher levels of depression, stress, somatic symptoms, anxiety, anger-hostility and lower NK cell number. Conclusion: caring for a family member with dementia is a very stressful experience and also affects the immune response.

2. Repeated measures analysis indicated that over the course of the study caregivers had significant improvements in general health, vitality, social function, and mental health scores and decreases in anxiety, anger/hostility, depression, perceived stress, and caregiver burden (subjective). Improvement was shown by 97.4% of caregivers who participated in the study with 61% showing improvement on all measures tested."

The means of assessing the effectiveness of MSBP was similar to the original study but with these differences: blood was not assessed for immune response, and a different questionnaire was used to help assess the person being cared for as an indirect means of assessing caregiver burden (a function index scale was used instead of a dementia scale). MSBP expanded assessment with use of instruments measuring insomnia and spiritual well-being, and well as the collection and analysis of qualitative data.

This current study showed improvement in at least one of the eleven quality of life measures in 100% of caregivers who completed the intervention; a majority (81%) showed improved on five of the measures, and almost a third of the participants (30%) showed improvement on eight or more measures. It replicated the SBP results of significant decreases in depression, anxiety, and stress, and significant increases in psychological functioning that was sustained at two months post-intervention and, in some cases, increased. The collection of qualitative data in MSBP supplemented the understanding of the effectiveness with documentation of positive changes in behavior, thinking, and a sense of healing. Qualitative data analysis also provided the very valuable understanding of this intervention that although it "is aimed at the caregivers, [it] benefits everybody (wounded and other family member as well)."

Effect of problems or obstacles on the results:
A consistent challenge to the implementation of this grant was staff turnover. With the plan for this study requiring nine people to implement, 26 people in total were involved due to personnel leaving the study. This involved extensive time devoted to hiring and training. Loss of co-investigators was particularly troublesome. Dr. McConnell dropped out before the study was approved by IRB, Dr. Ramos left early in the provision of the intervention, and Dr. Lewis retired in the third year. None of these persons were able to be replaced, leaving the primary investigator alone. Likewise, group facilitators and grant managers rapidly turned over. Particularly at the end of the study, this affected the manuscript production and required an extension to provide the final report.

A four-month turnaround time in the amendment requesting to add an additional site delayed progress for inclusion of caregivers of warriors using VA care. This had a negative impact on recruitment and the ability to hold groups, thus overall affecting the final number of participants.

Limitations:
All research studies have limitations, and this is no exception. Because this was an intervention study, we tried to contact and invite all possible caregivers to participate but the recruitment strategy may have unknowingly missed segments of the population. While the attempt was made

to be specific in the eligibility criteria, eligible persons may not have considered themselves to be so for many reasons. One may involve the use of the term "caregiver." Some participants indicated that, while they participated in the intervention, they did not consider themselves "caregivers" but family members who were just doing what was right in caring for their loved ones. Other caregivers may have declined to participate because they didn't think they met the criteria for other reasons such as caring for one injured outside of a combat zone. This issue of combat vs. non-combat injury seemed to be a point of contention among caregivers. In addition, limitations to the results may have occurred if caregivers who were invited but refused to participate differed from those who did participate.

Conclusion:
We successfully completed the objectives of this study, which we organized under the RE-AIM model. (1) The revised program content is appropriate for the military context. (2) Through intense and innovative recruitment methods, we "reached" out to as many family caregivers in this community that we possibly could. (3) The institutions "adopted" the program while we were there to provide it with acceptance and provision of facility resources. (4) We "implemented" the program with fidelity to its protocol in both the active duty and veteran settings in the provision of 26 Stress-Busting groups of caregivers. (5) The "effectiveness" of the program on the individual and how well this was (6) "maintained" was measured with mixed methodology. Participants who engaged in this intervention study showed statistically significant improvement in different measures of quality of life that were either sustained (maintained) at the two-month follow-up or showed continued improvement. Participants who completed the intervention overall affirmed it as being "a great experience" and "very beneficial" to both the participants and their families, with the participants experiencing positive change in behavior, change in dealing with emotions, healing, and cognitive change. The program provided in nine weekly sessions is more effective than when provided twice weekly, although the latter still induces positive change in participants. Although the lessons and skills in this program would be valuable to caregivers soon after becoming a caregiver, the intensity as well as logistics of their lives at that time make it difficult for many caregivers to maintain the energy and focus to complete the program. Therefore, it is best that providers of this intervention recruit caregivers whose situations are more stabilized. In summary, this study has more than achieved its goal of positively affecting the quality of life of family caregivers; it also provided healing touch in the lives of the participants' warriors and families.

Significance of Study or Project Results to Military Nursing

The study results provide information that is significant to different arenas of military nursing. To all areas of nursing comes the increased understanding of the role and importance of family caregivers. Family members provide extraordinary services in the long-term care of wounded warriors, services that are extremely vital to the well-being of the wounded warriors but are not provided by the health care system. However, with family caregiving, which is often being very intense and challenging, family members can be very stressed with caregiving responsibilities; Caregiving can take psychological and physical tolls on the caregivers.

For the clinical nurse and the case manager of wounded warriors, the results of the study will assist them in increasing their effectiveness of providing care to the warrior by providing care to the family through highlighting the many issues and qualities of family caregivers. These are a longing to be recognized and to know they are not alone, a tendency to keep everything inside themselves, depression, anxiety, hostility, insomnia, and somatization, to name a few. Many caregivers do not even realize how stressed they are. This study makes clear that attention focused on the caregiver is attention well spent, as the caregiver’s well-being influences the well-being of the family and its dynamics. Recognition of the role and value of the caregiver, offering encouragement in their caregiving responsibilities, knowing support group or other stress management resources and encouraging the caregiver to use them can positively affect the caregiver, the warrior, and the family.

This program provides evidence that this structured attention to caregivers to provide assistance with stress management provides remarkable improvement in their coping abilities as well as in behavioral change. The changes in the caregiver then influence the warrior and family. Promoting well-being of the family member of the wounded/injured/ill service members who require a great deal of care is a means of promoting force health protection. The leadership and policy-makers of nursing who recognize this may be more willing to take the steps to incorporate an evidence-based program such as this.

Changes in Clinical Practice, Leadership, Management, Education, Policy, and/or Military Doctrine that Resulted from Study or Project

None to date.

References Cited

Kessler, R. S., E. P. Purcell, R. E. Glasgow, L. M. Klesges, R. M. Benkeser and C. J. Peek (2013). "What Does It Mean to “Employ” the RE-AIM Model?" Evaluation & the Health Professions **36**(1): 44-66.

Lewis, S. L., D. Miner-Williams, A. Novian, M. I. Escamilla, P. H. Blackwell, J. H. Kretzschmar, L. C. Arevalo-Flechas and P. N. Bonner (2009). "A stress-busting program for family caregivers." Rehabil Nurs **34**(4): 151-159.

Murphy, M. R., M. I. Escamilla, P. H. Blackwell, K. T. Lucke, D. Miner-Williams, V. Shaw and S. L. Lewis (2007). "Assessment of caregivers' willingness to participate in an intervention research study." Res Nurs Health **30**(3): 347-355.

Summary of Dissemination

Type of Dissemination	Citation	Date and Source of Approval for Public Release
Publications	None	
Publications in Press		
Published Abstracts		
Podium Presentations	Miner-Williams, D. “Families of Wounded Warriors.” Inaugural Cultural Proficiency Institute. San Antonio, TX. 17 June 2014. UTHSCSA School of Nursing. Miner-Williams, D. “SBP for Military Family Caregivers: A Legacy of Caring.” 35th Annual Conference of the International Association for Human Caring. 26 May, 2014. Kyoto, Japan. Miner-Williams, D & Loomis, M. “Family Caregivers of Wounded Warriors.” 34th Annual Conference of the International Association for Human Caring. 31 May, 2014. Orlando, FL	

	Lewis, S., Miner-Williams, D. and Loomis, M. Keynote address: “Stress-Busting Program for Family Caregivers of Dementia Patients and Wounded Warriors”; April 16-20, 2013; International Society of Psychiatric-Mental Health Nurses Psychopharmacology Institute and Annual Conference; San Antonio, Texas	
Poster Presentations	Miner-Williams, D., Loomis, M., Prasad, V. “I Feel Recharged”: The Subjective Effects of the Stress-Busting Program on Family Caregivers of Wounded Warriors. University of Texas Health Science Center 4th Annual Frontiers of Translational Research Day. 20 March 2013 Miner-Williams, D. Escamilla, M. Lewis, S. Ramos, M. Kretzschmar, J. Kirmse, D. The Stress-Busting Program for Family Caregivers of Wounded Warriors: An Adaptation of an Evidenced-Based Program. July 17-21, 2012. 2012 Summer Institutes on Evidence-Based Quality Improvement. San Antonio, Texas	
Media Reports	UTHSC News: “Helping caregivers of wounded warriors topic of nursing research with goal of national dissemination” Posted: Tuesday, February 26, 2013 UTHSC News: “Nursing program helps caregivers of wounded warriors” Posted: Tuesday, March 05, 2013 • Volume: XLVI • Issue: 5	

Other		

Reportable Outcomes

Reportable Outcome	Detailed Description
Applied for Patent	None
Issued a Patent	None
Developed a cell line	None
Developed a tissue or serum repository	None
Developed a data registry	None

Recruitment and Retention Table

Recruitment and Retention Aspect	Number
Subjects Projected in Grant Application	135
Subjects Available	*
Subjects Contacted or Reached by Approved Recruitment Method	574
Subjects Screened	263
Subjects Ineligible	0
Subjects Refused	0
Human Subjects Consented	110
Subjects Who Withdrew	25
Subjects Who Completed Study	79
Subjects With Complete Data	59

Subjects with Incomplete Data	41

*This datum is not collected or maintained by medical facilities. On a monthly basis one is able to determine an estimated range of active Army caregivers by gathering the number of non-medical attendants registered and the number of soldiers assigned to the Warriors in Transition Battalion, which also includes non-injury soldiers in transition. (e.g., an average month was >63 and <600). The smaller numbers of wounded Marines, airmen, and sailors were estimated by calls to the respective service representatives. Each month included new and recurring persons from the prior months. Similarly, the VA Caregiver Coordinator stated she had no way of calculating number of caregivers for wounded warriors. The total number of registered caregivers is available (now over 300), but these included all caregivers (not just wounded warriors) and only those caregivers who meet the criteria for the caregiver program AND have registered with the VA Caregiver Program.

Final Budget Report

The grant ended with excess funds that are being returned. The excess occurred from salaries not expended due to the loss of personnel.

Final Budget Report as of December 31, 2013

UTHSCSA/OSP

CATEGORY	ORIGINAL AWARD	ADDITIONAL FUNDS RECEIVED	REALLOCATIONS	EXPENSED TO DATE (DEC 31, 2013)	PROJECTED EXPENSES TO END OF STUDY	REMAINING AMOUNT
Personnel	318,271.00	138,882.00	8,924.00	462,606.23	0.00	3,470.77
Consultant	0.00	0.00	0.00	0.00	0.00	0.00
Equipment	0.00	0.00	0.00	0.00	0.00	0.00
Supplies	31,519.00	0.00	(3,671.00)	23,308.35	0.00	4,539.65
Travel	2,000.00	0.00	0.00	2,135.06	0.00	(135.06)
Patient Care Costs	0.00	0.00	0.00	0.00	0.00	0.00
Other Expenses	0.00	0.00	0.00	0.00	0.00	0.00
Contracual Cost					0.00	
Direct Cost	3,475.00	0.00	(3,410.00)	65.00	0.00	0.00
Indirect Cost	1,878.00	0.00	(1,843.00)	35.00	0.00	0.00
UTHSCSA Indirect Charges	92,857.00	10,118.00	0.00	100,933.33	0.00	2,041.67
TOTAL	450,000.00	149,000.00	0.00	589,082.97	0.00	9,917.03