



## Article

# Pilot Study of a Resiliency Based and Trauma Informed Intervention for Veterans

Kelly Baek \*, Kimberly R. Freeman, Sophia Truong , Christi Bell and Susanne B. Montgomery

Department of Social Work & Social Ecology, School of Behavioral Health, Loma Linda University, 1898 Business Center Drive, San Bernardino, CA 92408, USA; kfreeman@llu.edu (K.R.F.); struong@llu.edu (S.T.); cebell@llu.edu (C.B.); smontgomery@llu.edu (S.B.M.)

\* Correspondence: kbaek@llu.edu; Tel.: +1-909-734-0478

**Abstract:** Over 50% of the 21 million veterans in the U.S. with behavioral health challenges are not having their needs met due to stigma and other barriers to care. Resiliency-based models focused on strengthening protective factors to help individuals adapt to adversity in community-based settings, that can be delivered by trained lay persons, are emerging approaches to help address this issue. This longitudinal pilot study evaluated the impact of one such evidenced-based intervention, the Community Resiliency Model (CRM), on veterans' behavioral health and daily functioning. A sample of 46 English-speaking, ethnically diverse veterans were recruited for this study. Repeated measure analyses showed that CRM skills significantly decreased distress and increased well-being. We also found strong short-term results for measures of daily functioning with a significant longer-term impact on participants' ability to control their feelings of being 'amped up'. Most (82%) participants maintained and continued to use the CRM skills daily to weekly and had very positive reactions to the program. Across our analyses, the results of this pilot study suggest that providing CRM trainings to veterans is a feasible, efficacious, and well-received approach to help address much-needed veteran behavioral health.

**Keywords:** community intervention; behavioral health; resiliency; trauma; veterans



**Citation:** Baek, K.; Freeman, K.R.; Truong, S.; Bell, C.; Montgomery, S.B. Pilot Study of a Resiliency Based and Trauma Informed Intervention for Veterans. *Trauma Care* **2024**, *4*, 75–86. <https://doi.org/10.3390/traumacare4010007>

Academic Editor: Brenda F. Seals

Received: 29 December 2023

Revised: 29 January 2024

Accepted: 2 March 2024

Published: 6 March 2024



**Copyright:** © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Background and Introduction

According to the U.S. Census Bureau, there are 21 million veterans in the United States (U.S.), and while the majority of U.S. veterans do not struggle with significant behavioral health challenges or transitional difficulties, veterans are at increased risk with over 25% experiencing behavioral health issues compared to 20% of U.S. adults [1]. Challenges include depression, post-traumatic stress disorder (PTSD), substance abuse disorder, anxiety, and/or serious mental illness [2] with PTSD being the most common behavioral health diagnosis [3].

Veterans with PTSD are frequently reported to experience more anger and aggression after military deployment [4–6] compared to non-veterans with PTSD [7]. During the first year after returning from military duty, 48% of veterans with PTSD engage in physical aggression and 20% engage in severe violence [4]. Other problems associated with PTSD include sleep issues, slowed processing of information, hyperarousal, and poor attention and concentration [8]. As a result, these veterans report having difficulties with integrating back into civilian life and often have problems managing interpersonal relationships with family and other social networks [3,8,9].

Despite these reports, many veterans who are struggling with behavioral health challenges are not receiving the services they need. Statistics show that only about 50 percent of returning veterans who need behavioral health treatment receive services [10]. According to the 2023 National Veteran Suicide Prevention Annual Report by the U.S. Department of Veteran Affairs, approximately 16 veterans died by suicide daily in 2021 and accounted for 14% of average suicides per day for all U.S. adults [11]. To meet the behavioral health needs

of veterans, a variety of trauma-focused therapies are used, including Prolonged Exposure (PE) Therapy, Cognitive Processing Therapy (CPT), Eye Movement Desensitization and Reprocessing (EMDR), and trauma-focused Cognitive Behavior Therapy (TF-CBT). While these evidence-based models have proven to be successful in veterans, many veterans still encounter barriers to care, leading to low treatment utilization [12].

Logistical barriers to behavioral health care in veterans include difficulties with transportation, limited knowledge of where to seek services, difficulties scheduling appointments, cost of treatment, and difficulty taking time off work [13]. Other barriers include low perceived need for behavioral health care and even institutional concerns of “not fitting in at the VA” [13]. Other studies have found that negative beliefs about treatment, shame, self-blame, and poor quality of care are factors that hinder veterans from utilizing treatment [14] with perceived stigma to behavioral health care being an ever-present concern [12].

Aside from access and stigma, evidence-based models such as Cognitive Behavioral Therapy (e.g., Cognitive Processing Therapy, Prolonged Exposure Therapy, Trauma-Focused Cognitive Behavioral Therapy) and Eye Movement Desensitization Reprocessing [11] presume that the trauma participants experienced is in the past, and is therefore no longer occurring, or will not occur again [15]. However, the reality of veteran post-service experience often presents with ongoing trauma that is further exasperated by poor reintegration including lack of employment and homelessness [16]. Given this reality of poor access to care, stigma to seeking treatment, and ongoing trauma experiences for many, a different type of approach is needed in addition to these traditional interventions. A resilience-focused approach which seeks to build on one’s innate protective factors has been suggested to help individuals and communities better adapt to adversity [17]. Using Kara-Miller’s definition, resiliency is described as an individual’s and community’s ability to identify and use individual and collective strengths in living fully with compassion in the present moment and to thrive while managing the activities of daily living [18]. These types of approaches emphasize strengths, seek to minimize the impact of adversity, are supported by familial and cultural influences and resources, and are therefore highly adaptable to changing circumstances [19]. Another strength is that resiliency models can be taught by trained lay community members in community settings, thereby decreasing stigma, access challenges, and cost.

Resiliency-based approaches have showed promise with veterans. One such study [20] delivered eight weeks of Transcendental Meditation (TM) to 29 veterans. Results showed reductions in symptoms of PTSD, avoidance, depression, and somatic pain, increases in mindfulness, and better quality of life. In a National Health and Resilience Veterans Study (NHRVS), researchers found that resiliency and gratitude were negatively correlated with the onset of suicidal ideation in over 2000 veterans [21]. Factors that predict resiliency include gratitude, sense of purpose, and altruism among veterans highly exposed to traumas [22]. Another study looked at supporting the effectiveness of traditional interventions such as T-CBT by adding EEG neurofeedback therapy and found it to be clinically effective for improving visual and auditory attentional functioning in both veterans and nonmilitary adults. In addition, this approach could be used by itself or as an addition to improving the effectiveness of therapeutic interventions for persons diagnosed with PTSD particularly within specific populations that have high nonresponse rates, such as veterans [23]. In addition, researchers found that preventative interventions focused on social connection, community, and well-being were important factors contributing to psychological resiliency later in life among older U.S. veterans [24].

One emerging resiliency-based approach is the Community Resilience Model (CRM) [18] developed by Elaine Miller-Karas and colleagues. CRM is a wellness program that builds on one’s ability to regulate the nervous system. Although CRM stems from the genre of empirically sound mind–body–spirit interventions such as the well-researched Mindfulness-Based Stress Reduction (MBSR), there are some important distinctions. Rooted in stabilizing sensory awareness techniques, CRM relies on interoception rather than cognitive awareness. Interoception is awareness of bodily sensations, or the “felt-sense” of the nervous system,

and is linked to emotion regulation [25,26]. While none of the 15 published CRM studies have been conducted with veterans, researchers have reported improved well-being and resilience and decreased secondary traumatic stress, burnout, and physical symptoms in a randomized clinical trial of nurses [27]. Similar results were observed in delivering CRM to women in drug abuse and domestic violence treatment [28]. CRM teaches participants a set of skills which seek to help them re-enter their “resiliency zone” (i.e., a more emotionally balanced state), which in turn improves decision making and mood as well as decreases anxiety and impulsivity [25,29]. CRM is described in more detail elsewhere [30], but Figure 1 briefly summarizes the skills. Since CRM is taught in group settings, individuals can learn these skills while also being able to tap into the support and experiences of their group members. Due to these previous encouraging results, along with its biological basis and flexibility, CRM is delivered in community-based settings and can be delivered by trained lay persons known to the target populations [29,30]. This model could serve as a helpful tool for veterans coping with stressors that adversely impact health and behavioral health.



**Figure 1.** Community Resiliency Model training diagram.

Figure 1 visually represents CRM as a non-linear model where tracking is the foundational skill partnered with all the other skills—thus its centered location. (1) Tracking refers to noticing the internal sensations (i.e., heart rate, muscle tension, temperature, breath) and identifying if the sensations are pleasant, unpleasant, or neutral. (2) Resourcing refers to positive imagery that elicits a sense of pleasant sensations. (3) Grounding refers to the awareness of the body in the present moment. (4) Gesturing refers to identifying a movement of the body or limb that brings a sense of peace or calm. (5) Shift and stay refers to shifting attention from something unpleasant to a place in the body that is more pleasant and staying with those sensations. (6) Help Now refers to quick strategies to help transition to the resilient zone (e.g., drink a glass of water, count backwards from 20, push against the wall). The authors of this paper have been given permission to use this copyrighted figure by the Trauma Resource Institute®.

#### *Veteran Extension Project*

The Department of Behavioral Health (DBH) San Bernardino County (SBC) Veteran Extension Project (VEP) was initiated in February 2012 in response to the request by the San Bernardino County Department of Behavioral Health to extend community resiliency services such as the CRM Innovation Project [15] to the local veteran population.

Implemented collaboratively by DBH and the Trauma Resource Institute (TRI), the goal of the project was to bring biologically-based trauma intervention training to veterans in SBC who have limited financial and logistical access to behavioral health resources. The intent was to expand local response capacity by offering training in CRM skills, which are biologically based, to address the needs of community members needing behavioral health education and coping skills. The groups were chosen because they were likely experiencing the effects of the cumulative trauma that is associated with poverty, racism, and untreated post-traumatic stress from military service including combat.

In this paper, we explore if CRM is a viable option to help address the behavioral health challenges that veterans face. The objectives of our feasibility study were to (1) evaluate the relevance and usefulness of CRM for veterans and (2) assess the impact of CRM on veteran's behavioral health, daily functioning, management of stress and perceived self-control. Specifically, we hypothesized that CRM would be relevant and useful to veterans, have a positive impact on their behavioral health, and help them improve daily functioning, manage stress, and increase self-control.

## 2. Methods

### 2.1. Participant Characteristics

This pilot evaluation used a within-person pre-, immediate post-, and 6-month post-test design. A total of 46 English-speaking, ethnically diverse veterans were recruited in the Inland Valley area of southern California. The recruitment process included presentations at community meetings, snowball sampling, and referrals from the CRM Innovation Project [15] participants. Approximately 58% of the participants were female, and most had lived in the area for an average of 20 years. The age of the participants ranged from 28 to 74 years with an average age of 63 years. Please see Table 1 for sociodemographic characteristics.

**Table 1.** Sociodemographic characteristics.

Sociodemographic Characteristics (N = 46)	n (%)
Age (28–74)	Mean = 62.75 (SD = 20.54) years
Gender <sup>1</sup>	
Female	21 (58%)
Male	15 (42%)
Ethnicity	
African-American	6 (17%)
Asian	1 (3%)
Caucasian	21 (58%)
Latino	10 (28%)
Native American	8 (22%)
Years Lived in Community (1–60 years)	Mean = 20.52 (SD = 17.10) years
Used Mental Health Services <sup>2</sup>	
No	8 (30%)
Yes	19 (70%)

Note: <sup>1</sup> n = 34; <sup>2</sup> n = 27.

### 2.2. Procedure

The CRM training consisted of 40 h of training delivered over a consecutive 5-day period. The first four days involved learning the skills and key concepts of CRM. The training, conducted by CRM certified trainers, included a combination of lecture, discussion, practice, and student teach-backs. Trainees created their own teaching plans with guidance and feedback from the trainers. On the fifth day, trainees demonstrated to the trainers how they would teach CRM to others. After the 5-day training, participants were offered quarterly booster sessions to refresh their understanding of the CRM and teaching skills.

### 2.3. Measures

Four tools were used to collect evaluation data for this pilot project: (1) the Post- and Follow-up Treatment Relevance, Use & Satisfaction Scale (TRUSS) Survey; (2) the Pre- and Post-Follow-up Symptom Questionnaire (SQ); (3) the Pre- and Post-Follow-up Daily Functioning Form (DFF), and (4) the Follow-up CRM Brief Questionnaire. Pre-tests were collected shortly before the training, post-tests were collected immediately after the training, and a second post-test (follow-up data) was collected at up to 6 months after the first post-test data were collected.

#### 2.3.1. Treatment Relevance, Use & Satisfaction (TRUSS)

TRUSS was specifically developed to assess the participants' level of understanding and preparedness to use CRM overall as well as for each individual skill in the community and was developed in a prior training [15]. Since TRUSS explores intervention response by participants, it was only assessed post-intervention to assure that participants understood the CRM skills and were able to maintain this understanding over time. Participants were asked how relevant/useful CRM was to them in addition to asking how often they used the skills. Responses ranged from not at all (1) to very often (5). They also indicated responses to the types of situations in which they used CRM, such as when they were angry or when they felt anxious (yes [1] or no [0]). Satisfaction with CRM skills was also assessed with questions such as "How satisfied are you with the CRM skills that you were taught" with responses ranging from not at all (1) to very satisfied (5). Their perceived understanding and preparedness to teach CRM skills to others was evaluated with responses ranging from 1 (not at all) to 5 (very prepared).

#### 2.3.2. Symptom Questionnaire (SQ)

The SQ includes a total of 92 items with 17 different negative symptoms related to each of the four distress indicators (i.e., anxiety, depression, somatic, and hostility) and six different positive symptoms related to each of the four well-being indicators (i.e., relaxed, contented, somatic, and friendly). Participants are asked if they have felt the indicator in the past week by marking "yes" or "no" or "true" or "false". For distress indicators, each "yes" or "true" item is given a score of 1. Higher scores represented a higher sense of distress. The total distress score for each distress indicator ranged from 0 to 16. Well-being scores are given a score of 1 if the answer was "no" or "false" with higher scores representing a greater sense of well-being. The total score for each type of well-being indicator ranged from 0 to 6. This scale has been shown to be suitable for measuring distress and well-being for both research and clinical purposes [31,32]. The internal reliability scores for the negative symptoms were all within the acceptable range: Anxiety (Cronbach's  $\alpha = 0.90$ ); Depression (Cronbach's  $\alpha = 0.92$ ); Somatic (Cronbach's  $\alpha = 0.92$ ); Hostility (Cronbach's  $\alpha = 0.93$ ). The well-being indicators also had acceptable internal reliability: Relaxed (Cronbach's  $\alpha = 0.87$ ); Content (Cronbach's  $\alpha = 0.69$ ); Somatic (Cronbach's  $\alpha = 0.74$ ); Friendly (Cronbach's  $\alpha = 0.75$ ).

#### 2.3.3. Daily Functioning Form (DFF)

The DFF was created by the Trauma Resource Institute and the veteran participants from the CRM Innovation Project. It listed thirteen common psychological and social experiences that service members and veterans might feel as they go about their daily lives. Respondents indicated the extent of agreement within the past two weeks for seven negative statements such as "I am bothered a lot by daily stressors" or "I have problems exercising good judgement" and six positive statements such as "I am starting to see things in a better way in my life" with responses ranging from 0 (strongly disagree) to 1 (Disagree), 2 (agree), and 3 (strongly agree). Positive statements were reverse coded so that higher scores indicated that the experiences caused greater disruption in their daily lives. The score range was 0–39 and reported good internal reliability (Cronbach's  $\alpha = 0.83$ ).

Following this quantitative survey, veterans were asked to expand upon their answers in an open-ended fashion.

#### 2.3.4. Brief CRM Questionnaire (Brief CRM)

The Brief CRM was also specifically developed as an evaluation tool for the aforementioned CRM Innovation study [15] to assess the benefits and use frequency of the CRM skills up to 6 months following the training sessions. Participants were asked to select a number that best fit for them for statements such as “The CRM skills are helpful to me in managing stress” with response ranging from 1 (strongly disagree) to 5 (strongly agree). They were also asked if they taught CRM skills to others, and if so, to identify the age and gender of the people they trained as well as the reason for teaching the skills. There was a section for participants to write in other ways they used the skills.

#### 2.4. Data Analyses

All analyses were conducted using SPSS version 23.0 (IBM Corporation, 2014, Chicago, IL, USA). Frequencies and descriptive analyses were run for the Symptom Questionnaire and the Daily Functioning Form, while percentages and means were calculated for the TRUSS and Brief CRM Questionnaire. Paired-sample *t*-tests were used to assess for significant differences in distress and well-being scores. The data were also examined for missingness and if assumptions were met. Missingness was at random, and pairwise deletion was used to deal with missing data. To test whether the assumptions for the paired samples *t*-test were met, QQ plots were created to assess for normal distribution, which was not violated nor were any outliers identified in the boxplots. This project was reviewed and given a waiver by the Loma Linda University Institutional Review Board due to the secondary data that were initially used as a part of the treatment evaluation process being de-identified.

### 3. Results

#### 3.1. Treatment Relevance, Use & Satisfaction

Results show that veterans reported a high level of satisfaction and felt prepared to teach all five skills at the immediate post-test and up to the 6-month follow-up test. Specifically, results showed that at post-test, veterans on average were 4.65 (out of 5) satisfied with the Tracking skill and had high preparedness 4.32 (out of 5) to teach this skill to others. For the Resourcing skill, the average level of satisfaction was 4.71, and the level of preparedness to teach the skill was 4.38. For the Grounding skill, the average level of satisfaction was 4.47, and the level of preparedness to teach grounding was 4.14. There were no significant mean differences with their level of satisfaction and preparedness across all skills up to the 6-month follow-up, indicating that the program effects were sustained. Table 2 further illustrates the results for the remaining skills Resource Intensification and Shift and Stay. Overall, our data suggest that the training was seen as effective, was able to be maintained over time, and was relevant and useful for veterans, supporting that the training met the objectives.

#### 3.2. Symptom Questionnaire

Results from the SQ indicate that all participants demonstrated a significant decrease in the areas of anxiety, depression, somatic symptoms, and hostility at the immediate post-test and at 6 months following the CRM training. In regard to the SQ well-being indicators, an overall increase in scores is representative of changes in the desired direction. Specifically, veterans reported a significant increase in well-being from pre-training to post-training in the areas of being more relaxed and friendly. In comparing the pre-training results to the 6-month follow-up results, while the well-being results were once again all in the desired direction, the somatic indicators were the only ones that remained significant (see Table 3).

**Table 2.** Averages and mean differences for Truss scale ( $n = 34$ ).

Skills (1–5)	Satisfaction		Preparedness	
	<i>m (sd)</i>	<i>t</i>	<i>m (sd)</i>	<i>t</i>
Tracking				
Post	4.65 (0.59)	1.98	4.35 (0.73)	0.48
Follow-up	4.32 (0.72)		4.25 (0.89)	
Resourcing				
Post	4.71 (0.52)	1.06	4.38 (0.74)	0.16
Follow-up	4.56 (0.58)		4.35 (0.73)	
Resource Intensification				
Post	4.62 (0.55)	1.95	4.27 (0.80)	0.28
Follow-up	4.25 (0.84)		4.21 (0.88)	
Grounding				
Post	4.47 (0.66)	1.6	4.24 (0.75)	0.48
Follow-up	4.18 (0.77)		4.14 (0.89)	
Shift and Stay				
Post	4.50 (0.57)	0.85	4.21 (0.78)	0.15
Follow-up	4.36 (0.73)		4.18 (0.82)	

Note: There were no significant mean differences between the post-test given immediately after training and the 3–6 month follow-up tests for either level of satisfaction or preparedness.

**Table 3.** Paired samples *t*-test results for pre/post-test/follow-up distress and well-being indicators.

Distress Indicators	<i>n</i>	Mean Scores			Changes in Mean Scores	
		Pre	Post	F/U	Pre-Post Change	Pre-F/U Change
Anxiety	25	5.78	2.52	3.22	3.96 ***	2.20 *
Depression	25	4.81	1.34	1.89	4.43 ***	2.49 *
Somatic	30	4.60	3.44	2.71	1.18 *	2.17 *
Hostility	25	5.26	1.61	2.84	3.62 ***	2.63 **
Well-Being Indicators						
Relaxed	31	4.81	5.73	5.84	−2.99 **	−1.82
Contentment	29	5.17	5.53	5.81	−1.54	−1.67
Somatic	18	3.04	3.17	3.33	−0.41	−2.31 *
Friendly	31	5.62	5.97	5.80	−2.17 *	−1.17

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Overall, the SQ results indicate a positive trend in reducing distress and increasing well-being in veterans who will be using the CRM skills for self-care and who will also be teaching the skills to others. Perhaps the most notable finding is the sustained significant improvement in anxiety, depression, and hostility symptoms.

### 3.3. Daily Functioning Form

Veterans reported less disruption in their overall daily functioning immediately after participating in the trainings. Although their daily functioning scores were not sustained up to the 6-month follow-up, scores trended in a desired direction. Since this was a feasibility study, we assessed a broad range of measures we thought might be impacted by using CRM skills. However, the Public Interactions, Better Way, Aggressive, Energy, Road Rage, Sleep, and Confidence measures were not affected and thus are not reported here. Improvements from pre- to post-test were seen to be related to participants' ability to manage their daily functioning, stressors, anger, judgment, amped up, proclivity toward self-medication through substances, and emotions. Although these measures were not significant at 6 months post-test, with the exception of being able to control feelings of being "amped up" being sustained, the direction of the scores suggest that participants were better able to settle themselves down (see Table 4).

**Table 4.** Paired samples *t*-test results for pre/post-test/follow-up daily functioning form.

	<i>n</i>	Mean Scores			Changes in Mean Scores	
		Pre	Post	F/U	Pre-Post Change	Pre-F/U Change
<b>Total Score (0–39)</b>						
Daily Functioning	27	11.73	8.31	10.23	3.18 **	0.78
Individual Experiences (0–3)						
Stressors	33	1.28	1.03	1.40	1.76 *	−0.40
Public Interaction	33	0.84	0.75	0.84	0.57	0.42
Angry	33	0.75	0.41	0.68	2.98 **	0.90
Better Way	32	0.74	0.48	0.50	1.44	0.16
Judgement	32	0.84	0.58	0.58	2.11 *	1.45
Amped	30	1.13	0.48	0.50	3.93 ***	3.42 **
Aggressive	32	0.66	0.56	0.64	0.77	0.68
Self-Medicare	29	10.82	0.50	0.65	2.54 *	0.59
Energy	30	1.21	0.93	0.88	1.35	1.37
Road Rage	29	0.75	0.89	0.79	−0.66	−0.31
Sleep	29	1.25	1.07	1.36	1.04	−1.66
Emotions	29	0.86	0.46	0.88	3.03 **	−0.36
Confidence	29	0.79	0.57	0.58	1.24	0.49

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

### 3.4. Brief CRM Questionnaire

While not tabled, over 90% of the trainees responded that they found the CRM skills to be helpful in managing stress, that they had increased self-control, and that the skills helped them get through difficult times. Over 20% used the skills every day, and 61% used the skills a few times a week with the other 18% reported using the skills less than once a week or once a week. The respondents also reported that they used CRM skills to help people in their community deal with issues related to alcohol, anxiety, anger, autism, death, depression, divorce, family, finances, health, homelessness, PTSD, sexual abuse, stress management, trauma, and work stress.

## 4. Discussion

The purpose of this feasibility study was to assess if CRM was relevant and useful to veterans and their community as well as to see if CRM can decrease mental distress and improve well-being, daily functioning, and help participants manage stress and life stressors. In contrast to what was observed in the literature [2,3,7,33], participants reported moderate to low levels of mental distress and physical symptoms. Due to participants being able to self-select, the study did not screen for veterans who experienced significant behavioral health challenges, and the majority of participants reported moderate to high levels of well-being prior to the training. However, as supported by studies that assessed resiliency-based interventions [19,20,34], CRM nevertheless had a positive impact on veteran's well-being and their daily functioning in addition to helping them manage stress and life stressors.

Respondents also reported that CRM was relevant and useful for themselves and their community. Our results that participants were able to maintain what they learned regarding the skills taught and the strong results on mental distress and well-being are highly encouraging, as are the short-term results on selected measures on daily functioning and individual experiences, with the important finding that participants felt that they could better deal with feelings of being “amped up” and this being maintained at the 6-month post-test.

The lack of 6-month post-test results for several measures may well have been due to a power issue. While we obtained follow-up post-test data from 74% of participants, a larger sample to begin with might have allowed for more longer-term effects. In addition, it is recommended that more frequent contact (e.g., reaching out once a month) in between the time of the post-test and follow-up test be incorporated into the process to help decrease attrition. We also feel that adapting future CRM skills programming for veterans to address



the daily functioning variables more directly could help maintain the observed short-term effectiveness.

Overall, the results of our pilot evaluation suggest that providing CRM trainings to veterans would have a positive impact on participants' mental health symptoms and well-being and would be well received by other veterans due to the lack of stigma attached to the resiliency framing of the program. The resiliency framing taps into veteran's innate resilience as a protective factor in their daily functioning. The fact that at the 6-month follow-up, 82% of the trainees reported that they were using the skills daily to a few times per week suggests that the CRM skills were indeed helpful in reducing harmful behaviors that result from a dysregulated nervous system.

#### *Study Strengths and Limitations*

While there are several strengths of this feasibility study, such as the novel idea to reach this population with a non-stigmatizing community-based approach that was well received, and our encouraging findings across most dimensions, there were several limitations. First, the sample size of this study ( $N = 46$ ) was relatively small. However, the fact that 74% ( $N = 34$ ) of respondents completed the 6-month follow-up is encouraging and speaks to the buy-in CRM received in this group of veterans. Since this was a pilot evaluation study, we set out to explore the possible effect of CRM across a broad number of outcome options. Therefore, the majority of the measures were not standardized nor had been widely used or tested on other populations, limiting the generalizability of our encouraging results. However, given the tools' high internal consistency measures, the relative newness of evaluation of CRM, and the limited number of tools that can assess the usability of CRM, the tools used in this study were able to provide additional insight about the types of effects we can expect going forward. We suggest that future studies with this populations use standardized measures for these dimensions (if available), allowing future studies to compare our encouraging results across studies.

Since this was a pilot evaluation to explore the feasibility and attractiveness to this intervention to the target population, we did not have a control group, which also limits the generalizability of our results. Also, while 28% of our veteran participants self-reported as Latino, the training and evaluation measures were only offered in English. Given the increasing diversity of the veteran population, it is suggested that future trainings and evaluation measures be adapted and translated into multiple languages so that this intervention can be shared with veterans for whom English is not the primary language.

Lastly, given that we chose to conduct multiple  $t$ -tests as our statistical analyses, our study results may have been more susceptible to type 1 error. In the future, we would like to expand the sample size to be able to run more rigorous analyses. In summary, future studies should recruit enough participants to assure sufficient power, use more standardized measures for the dimensions as identified as promising areas of CRM impact, and ideally assign participants to a control, waitlist control or at least a comparison group to allow us to draw stronger, more generalizable conclusions.

#### **5. Conclusions**

In conclusion, many veterans struggling with behavioral health symptoms face significant barriers when seeking professional behavioral health services. A resilience-focused approach, such as the CRM model, has been suggested to help individuals and communities better adapt to adversity. Since CRM is a non-stigmatizing and accessible model that can be learned and practiced without a behavioral health expert, veterans may feel more comfortable with this form of approach. The aim of this study was to evaluate the training to determine the feasibility and usefulness of this approach for this population, and it appeared that there is support that CRM can be utilized to help decrease mental distress and increase the well-being and daily functioning among veterans. While initial findings demonstrated promising short-term impact on veterans' well-being and resiliency, further longitudinal research would help assess the long-term efficacy and sustainability

of CRM. Therefore, it is suggested that further studies be scaled up and conducted using a control or comparison groups to validate the impact of CRM on veterans' behavioral health symptoms.

**Author Contributions:** Conceptualization, K.B. and K.R.F.; methodology, K.B., K.R.F. and S.B.M.; validation, K.B. and K.R.F.; formal analysis, K.B., K.R.F., S.T. and C.B.; writing—original draft preparation, K.B. and K.R.F.; writing—review and editing, K.B., K.R.F., S.T., C.B. and S.B.M.; visualization, K.B., S.T., C.B. and S.B.M. All authors have read and agreed to the published version of the manuscript.

**Funding:** Elaine Miller-Karas received grant funds for conducting this project through San Bernardino County Mental Health. The purpose of the funding was to provide training to staff and community members in the use of the Community Resiliency Model. Funds were used for training materials, independent contractors and staff salaries. Small stipends were also paid to the participants of the trainings. Stephanie Citron was contracted by the Trauma Resource Institute to collect outcomes data and to write the executive summary of the research. Veronica Kelley is an executive for San Bernardino County where the project was conducted and received a regular salary. It is important to note that funding for this project was directed at the implementation of a community-based wellness model. Research was written into the proposal. The research was designed by a contractor of the Trauma Resource Institute. The training teams were required to give informed consent for the pre- and post-tests evaluating the effectiveness of the Community Resiliency Model training. The data were given to the Trauma Resource Institute. All informed consent forms and completed surveys are kept in locked cabinets held by the Trauma Resource Institute. Outcomes data were collected to add to the knowledge of the effectiveness of the Community Resiliency Model training. As such, the funding was not dependent on the outcomes, and the data were analyzed for publication independent of the individuals directly involved in the project implementation. Authors Kelly Baek, Kimberly Freeman, Sophia Truong, Christi Bell, and Susanne Montgomery have no relevant financial or non-financial interests to disclose.

**Institutional Review Board Statement:** This research project was reviewed by the Loma Linda University Institutional review board and was given a waiver based on it being de-identified secondary data that were initially part of the treatment evaluation process. The work was supported by the California Mental Health Services Act- Proposition 63 through the County of San Bernardino (Community Resiliency Model Project: MHSA-INN— Contract Number10-1103). Potential conflicts of interest are addressed in the title page of this document and are not thought to impact the outcomes of the research. Finally, all authors participated in the completion of this article and certify full responsibility for the manuscript.

**Informed Consent Statement:** Written informed consent was obtained from all individual participants included in the study. Participants were also informed in writing that their de-identified data could be used for research.

**Data Availability Statement:** The raw data supporting the conclusion of the article will be made available by the authors on request.

**Acknowledgments:** We would like to acknowledge the Trauma Resource Institute and Elaine Miller-Karas for their contributions and support in this study.

**Conflicts of Interest:** The authors declare no conflicts of interest.

## References

1. Substance Abuse and Behavioral health Services Administration. *Key Substance Use and Behavioral Health Indicators in the United States: Results from the 2019 National Survey on Drug Use and Health*; (HHS Publication No. PEP20-07-01-001); Center for Behavioral Health Statistics and Quality, Substance Abuse and Behavioral Health Services Administration: Rockville, MD, USA, 2020. Available online: <https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHFFR1PDFWHTML/2019NSDUHFFR1PDFW090120.pdf> (accessed on 15 December 2023).
2. Trivedi, R.B.; Post, E.P.; Sun, H.; Pomerantz, A.; Saxon, A.J.; Piette, J.D.; Maynard, C.; Arnow, B.; Curtis, I.; Fihn, S.D.; et al. Prevalence, comorbidity, and prognosis of mental health among US veterans. *Am. J. Public Health* **2015**, *105*, 2564–2569. [[CrossRef](#)] [[PubMed](#)]
3. Doran, J.M.; Deviva, J. A Naturalistic Evaluation of Evidence-Based Treatments for Veterans With PTSD. *Traumatology* **2018**, *24*, 157–167. [[CrossRef](#)]

4. Elbogen, E.B.; Wagner, H.R.; Johnson, S.C.; Kinneer, P.; Kang, H.; Vasterling, J.J.; Timko, C.; Beckham, J.C. Are Iraq and Afghanistan veterans using mental health services? New data from a national random-sample survey. *Psychiatr. Serv.* **2013**, *64*, 134–141. [[CrossRef](#)] [[PubMed](#)]
5. Reijnen, A.; Rademaker, A.R.; Vermetten, E.; Geuze, E. Prevalence of mental health symptoms in Dutch military personnel returning from deployment to Afghanistan: A 2-year longitudinal analysis. *Eur. Psychiatry* **2015**, *30*, 341–346. [[CrossRef](#)] [[PubMed](#)]
6. Shea, M.T.; Stout, R.L.; Reddy, M.K.; Sevin, E.; Pousseau, C.; Lambert, J.; Cameron, A. Treatment of anger problems in previously deployed post-9/11 veterans: A randomized controlled trial. *Depress. Anxiety* **2022**, *39*, 274–285. [[CrossRef](#)] [[PubMed](#)]
7. Taft, C.T.; Watkins, L.E.; Stafford, J.; Street, A.E.; Monson, C.M. Posttraumatic stress disorder and intimate relationship problems: A meta-analysis. *J. Consult. Clin. Psychol.* **2011**, *79*, 22. [[CrossRef](#)]
8. Scott, J.; Matt, G.; Wroklage, K.; Crnich, C.; Jordan, J.; Southwick, S.; Krystal, J.; Schweinsburg, B. A Quantitative Meta-Analysis of Neurocognitive Functioning in Posttraumatic Stress Disorder. *Psychol. Bull.* **2015**, *141*, 105–140. [[CrossRef](#)] [[PubMed](#)]
9. Elbogen, E.B.; Cueva, M.; Wagner, H.R.; Sreenivasan, S.; Brancu, M.; Beckham, J.C.; Male, L.V. Screening for violence risk in military veterans: Predictive validity of a brief clinical tool. *Am. J. Psychiatry* **2014**, *171*, 749–757.
10. Herbst, E. Overcoming barriers to care for returning veterans: Expanding services to college campuses. *J. Rehabil. Res. Dev.* **2013**, *50*, VII.
11. US Department of Veterans Affairs. 2023 National Veteran Suicide Prevention Annual Report [PDF]. 2023. Available online: <https://www.mentalhealth.va.gov/docs/data-sheets/2023/2023-National-Veteran-Suicide-Prevention-Annual-Report-FINAL-508.pdf> (accessed on 20 December 2023).
12. Krill Williston, S.; Martinez, J.H.; Abdullah, T. Mental health stigma among people of color: An examination of the impact of racial discrimination. *Int. J. Soc. Psychiatry* **2019**, *65*, 458–467. [[CrossRef](#)]
13. Kline, A.C.; Panza, K.E.; Nichter, B.; Tsai, J.; Harpaz-Rotem, I.; Norman, S.B.; Pietrzak, R.H. Mental health care use among US military veterans: Results from the 2019–2020 National Health and Resilience in Veterans Study. *Psychiatr. Serv.* **2022**, *73*, 628–635. [[CrossRef](#)] [[PubMed](#)]
14. Bovin, M.; Miller, C.; Koenig, C.J.; Lipschitz, J.M.; Zamora, K.A.; Wright, P.; Pyne, J.M.; Burgess, J.F. Veterans’ experiences initiating VA-based behavioral health care. *Psychol. Serv.* **2019**, *16*, 612–620. [[CrossRef](#)]
15. Freeman, K.; Baek, K.; Ngo, M.; Karas, E.; Cirtron, S.; Montgomery, S. Exploring the usability of a community resiliency model approach in a high need/low research traumatized community. *Community Behav. Health J.* **2021**, *58*, 679–688. [[CrossRef](#)]
16. Perkins, D.F.; Aronson, K.R.; Morgan, N.R.; Bleser, J.A.; Vogt, D.; Copeland, L.A.; Finley, E.P.; Gilman, C. Veterans’ use of programs and services as they transition to civilian life: Baseline assessment for the Veteran Metrics Initiative. *J. Soc. Serv. Res.* **2020**, *46*, 241–255. [[CrossRef](#)]
17. Yankellevich, A.; Goodman, Y.; Goodman, Y.C. “You can’t choose these emotions...they simply jump up”: Ambiguities in Resilience-Building Interventions in Israel. *Cult. Med. Psychiatry* **2017**, *41*, 56–74. [[CrossRef](#)] [[PubMed](#)]
18. Miller-Karas, E. Resilience and trauma defined. In *Building Resilience to Trauma*; Routledge: London, UK, 2015; pp. 21–29.
19. Saul, J.; Simon, W. Building Resilience in Families, Communities, and Organizations: A Training Program in Global Behavioral health and Psychosocial Support. *Fam. Process* **2016**, *55*, 689–699. [[CrossRef](#)]
20. Kang, S.S.; Erbes, C.R.; Lamberty, G.J.; Thuras, P.; Sponheim, S.R.; Polusny, M.A.; Moran, A.C.; Van Voorhis, A.C.; Lim, K.O. Transcendental meditation for veterans with post-traumatic stress disorder. *Psychol. Trauma Theory Res. Pract. Policy* **2018**, *10*, 675. [[CrossRef](#)]
21. Smith, N.B.; Mota, N.; Tsai, J.; Monteith, L.; Harpaz-Rotem, I.; Southwick, S.M.; Pietrzak, R.H. Nature and determinants of suicidal ideation among US veterans: Results from the national health and resilience in veterans study. *J. Affect. Disord.* **2016**, *197*, 66–73. [[CrossRef](#)]
22. Isaacs, K.; Mota, N.P.; Tsai, J.; Harpaz-Rotem, I.; Cook, J.M.; Kirwin, P.D.; Krystal, J.H.; Southwick, S.M.; Pietrzak, R.H. Psychological resilience in US military veterans: A 2-year, nationally representative prospective cohort study. *J. Psychiatr. Res.* **2017**, *84*, 301–309. [[CrossRef](#)]
23. Villalpando, L.S.; McReynolds, C.J.; Lee, G.; Montgomery, S.; Vermeersch, D. Neurofeedback: An examination of attentional processes in adults with self-reported PTSD symptoms. *NeuroRegulation* **2020**, *7*, 142. [[CrossRef](#)]
24. Pietrzak, R.H.; Cook, J.M. Psychological resilience in older U.S. veterans: Results from the National Health and Resilience in Veterans Study. *Depress Anxiety* **2013**, *30*, 432–443. [[CrossRef](#)]
25. Critchley, H.D.; Garfinkel, S.N. Interoception and emotion. *Curr. Opin. Psychol.* **2017**, *17*, 7–14. [[CrossRef](#)] [[PubMed](#)]
26. Khalsa, S.S.; Adolphs, R.; Cameron, O.G.; Critchley, H.D.; Davenport, P.W.; Feinstein, J.S.; Feusner, J.D.; Garfinkel, S.N.; Lane, R.D.; Mehling, W.E.; et al. Interoception and mental health: A roadmap. *Biol. Psychiatry Cogn. Neurosci. Neuroimaging* **2018**, *3*, 501–513. [[CrossRef](#)] [[PubMed](#)]
27. Grabbe, L.; Higgins, M.; Jordan, D.; Noxsel, L.; Gibson, B.; Murphy, J. The Community Resiliency Model®: A Pilot of an Interoception Intervention to Increase the Emotional Self-Regulation of Women in Addiction Treatment. *Int. J. Behav. Health Addict.* **2020**, *19*, 793–808. [[CrossRef](#)]
28. Grabbe, L.; Miller-Karas, E. The trauma resiliency model: A “bottom-up” intervention for trauma psychotherapy. *J. Am. Psychiatr. Nurses Assoc.* **2018**, *24*, 76–84. [[CrossRef](#)] [[PubMed](#)]
29. Aréchiga, A.; Freeman, K.; Tan, A.; Lou, J.; Lister, Z.; Buckles, B.; Montgomery, S. Building resilience and improving wellbeing in Sierra Leone using the community resiliency model post Ebola. *Int. J. Ment. Health* **2023**, *53*, 111–123. [[CrossRef](#)]

30. Habimana, S.; Biracyaza, E.; Habumugisha, E.; Museka, E.; Mutabaruka, J.; Montgomery, S.B. Role of community resiliency model skills trainings in trauma healing among 1994 Tutsi genocide survivors in Rwanda. *Psychol. Res. Behav. Manag.* **2021**, *14*, 1139–1148. [[CrossRef](#)] [[PubMed](#)]
31. Benasi, G.; Fava, G.A.; Rafanelli, C. Kellner's symptom questionnaire, a highly sensitive patient-reported outcome measure: Systematic review of clinimetric properties. *Psychother. Psychosom.* **2020**, *89*, 74–89. [[CrossRef](#)] [[PubMed](#)]
32. Kellner, R. A symptom questionnaire. *J. Clin. Psychiatry* **1987**, *48*, 268–274.
33. Marshall, A.D.; Panuzio, J.; Taft, C.T. Intimate partner violence among military veterans and active duty servicemen. *Clin. Psychol. Rev.* **2005**, *25*, 862–876. [[CrossRef](#)]
34. Orth, U.; Wieland, E. Anger, hostility, and posttraumatic stress disorder in trauma-exposed adults: A meta-analysis. *J. Consult. Clin. Psychol.* **2006**, *74*, 698. [[CrossRef](#)] [[PubMed](#)]

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.