2020

# Resource for a brief early somatic intervention to reduce symptoms of post-traumatic stress for victims of violence crime in acute hospital settings in Southeast Los Angeles

Jamie Gamboa
jgersh@gm.slc.edu

Pepperdine University

Graduate School of Education and Psychology

# RESOURCE FOR A BRIEF EARLY SOMATIC INTERVENTION TO REDUCE SYMPTOMS OF POST-TRAUMATIC STRESS FOR VICTIMS OF VIOLENCE CRIME IN ACUTE HOSPITAL SETTINGS IN SOUTHEAST LOS ANGELES

A clinical dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Psychology

by

Jamie Gamboa

June 2020

LaTonya Wood, Ph.D. – Dissertation Chairperson

This clinical dissertation, written by

Jamie Gamboa

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PSYCHOLOGY

Doctoral Committee:

LaTonya Wood, Ph.D. - Dissertation Chairperson

Aaron Aviera, Ph.D.- Committee Member

Sarah Metz, Psy.D. - Committee Member

TABLE OF CONTENTS

Page

LIST OF FIGURES ..... vi

DEDICATION ..... vii

ACKNOWLEDGMENTS ..... viii

VITA ..... ix

ABSTRACT ..... xvi

Chapter 1: The Problem ..... 1

- Introduction ..... 1
- Symptoms of Post-Traumatic Stress Disorder ..... 2
- Prevalence and Risk Factors ..... 3
- Barriers to Treatment of PTSD in Southeast LA ..... 6
- Bridging the Gap ..... 8

Chapter 2: Background ..... 10

- Perceived Mind-body Dualism and its Effect on Psychotherapy ..... 10
- Somatic Impact of Trauma ..... 11
- Limitations of Traditional Psychotherapy for Treatment of Trauma ..... 17
- Somatic Interventions for Trauma ..... 18
- Brief Early Somatic Interventions ..... 20
- Purpose of this Project ..... 21

Chapter 3: Overview of Methodology ..... 22

- Objectives and Rationale ..... 22
- Research Questions ..... 22
- Review Protocol ..... 22
- Reviewers ..... 23
- Dates of Review ..... 23
- Eligibility Criteria ..... 23
- Search Strategy ..... 24
- Data Collection Process ..... 26
- Risk of Bias ..... 26
- Resource Creation Method ..... 27
- Resource Review Method ..... 28

Chapter 4: Results ..... 29

- Search Term Revisions ..... 29
- Search Results ..... 30

Literature Review....31
Summary of Literature....46
Answers to Research Questions....56
Literature Review Conclusion....64
PRISMA Review and JBI Critical Appraisal Checklists....65
External Reviewer Responses to Review Form....65
External Reviewer Responses to Review Form....65
Implementation of Feedback....68

Chapter 5: Discussion....70

Limitations....72
Conclusion....72

REFERENCES....74

APPENDIX A: Reviewer Consent Form....87

APPENDIX B: Review Form....92

APPENDIX C: PRISMA Checklist and Flow Diagram....94

APPENDIX D: TRM Level 1 Training Certificate....98

APPENDIX E: JBI Critical Appraisal Checklists....100

APPENDIX F: Resource....104

# LIST OF FIGURES

Page

Figure C1. PRISMA 2009 checklist part 1 ..... 95

Figure C2. PRISMA 2009 checklist part 2 ..... 96

Figure C3. PRISMA 2009 flow diagram ..... 97

Figure D4. TRM level 1 training certificate ..... 99

Figure E5. JBI critical appraisal checklist for systematic review and research syntheses ..... 101

Figure E6. JBI critical appraisal checklist for text and opinion papers ..... 102

Figure E7. JBI critical appraisal checklist for quasi-experimental studies ..... 103

Figure F6. CRM Resilient Zone ..... 126

# DEDICATION

This dissertation is dedicated to the memory of Jennifer Wong. I will keep fighting for you.

# ACKNOWLEDGEMENTS

Thanks to my husband, Rafael Gamboa, for your endless patience and support throughout this endeavor. Thanks also to my friend, Julia Lockyer, who was always there to provide support and accountability. I'm quite certain this dissertation would never have been completed if not for our Friday night accountability sessions at Bricks & Scones. Speaking of Bricks & Scones, I would also like to thank the many cafes in the Los Angeles and Fresno areas that contributed to my efforts by graciously allowing me to utilize their establishments as my own personal office space for the low price of one caffeinated beverage. The office space (and the caffeinated beverages) were helpful beyond words.

# VITA

## EDUCATION

**Psy.D. in Psychology**

Pepperdine Graduate School of Education and Psychology, Los Angeles, CA

September 2016-May 2020

**M.A. in Psychology**

Pepperdine Graduate School of Education and Psychology, Los Angeles, CA

January 2014 - August 2015

**B.A. in Liberal Arts**

Sarah Lawrence College, Bronxville, NY

September 2006 - May 2010

**Study Abroad**

Tsuda College, Tokyo, Japan

August 2009 - August 2010

## HONORS AND AWARDS

Clinical Comprehension Examination 2018—Received Pass with Distinction

## CLINICAL EXPERIENCE

**Pre-Doctoral Psychological Intern at Kaiser Permanente Medical Facility in Fresno**

August 2019-August 2020

- Provided individual therapy in a hospital setting to adults with a variety of diagnostic presentations referred to Behavioral Medicine program
- Provided group therapy in Intensive Outpatient Program to adolescents presenting with depression, anxiety, suicidal ideation/attempts, and self-harm

- Conducted Intakes and assigned diagnoses
- Administered, scored, and interpreted neurocognitive and psycho-diagnostic assessments
- Wrote assessment reports for physicians to inform patient care and gave feedback to patients based on assessment results
- Charted patient progress
- Provided counseling services in an underserved high school setting
- Conducted program evaluation research on Kaiser's new Depression/Anxiety Program
- Gave psychoeducational presentations to chronic pain patients about biological and psychological connections between chronic stress, trauma, and pain

**Mental Health Intern at Gateways Hospital and Mental Health Center**

July 2018 - July 2019

- Provided individual and group psychotherapy in an intensive residential forensic facility for seriously mentally ill adults ages 18-59
- Corresponded with family members, conservators, and probation officers as needed
- Provided case management services
- Charted client progress
- Administered, scored, and interpreted neuropsychological assessments
- Wrote assessment reports in order to inform therapeutic work with client and gave clients feedback based on assessment results

**Mental Health Intern at Los Angeles Job Corps Center**

September 2017 - August 2018

- Provided individual and group psychotherapy for transitional aged youths

- Administered, scored, and interpreted psycho-educational and psycho-diagnostic assessments
- Wrote assessment reports for students requesting reasonable accommodations and gave students feedback based on assessment results
- Co-ran psychoeducation groups on bullying and suicide prevention for incoming students
- Co-ran psychoeducation presentations on active listening skills for staff members
- Charted student progress

**Student Therapist at Pepperdine West Los Angeles Community Counseling Clinic**

September 2016 - June 2019

- Provided individual, couple, and family psychotherapy for adult, adolescent, and child clients at a community counseling center
- Conducted intakes and assigned diagnoses
- Charted client progress
- Provided on-call crisis management
- Administered assessments to regularly monitor mental health symptoms of clients on caseload

**Shift Supervisor at Didi Hirsch's Suicide Prevention Crisis Line**

September 2017 - June 2019

- Provided general supervision on crisis calls and supports counselors as needed
- Conducted lethality assessments of calls and assists crisis counselors in determining lethality
- Initiated debriefing session with crisis counselors after they have taken a call
- Assisted crisis counselors with locating the most appropriate resources for callers
- Assisted in identifying crisis counselor training needs relating to suicide prevention and crisis response

- Completed mandated reports and other relevant forms
- Completed performance evaluations for all volunteer crisis counselors
- Participated in suicide prevention training for new counselors by giving lectures and performing role-plays

**Follow-up Counselor at Didi Hirsch's Suicide Prevention Crisis Line**

July 2015 -June 2019

- Provided extra support by making follow-up calls to high risk callers and third-party callers at a suicide prevention crisis hotline
- Participated in the Extended Follow-up Program, which provides short-term crisis coaching over the phone to individuals who are released from local emergency rooms after being hospitalized for suicide attempts, suicidal ideation, or self-injurious behavior

**Crisis Line Counselor at Didi Hirsch's Suicide Prevention Crisis Line**

July 2014 - September 2017

- Performed suicide risk assessments and provided crisis counseling for individuals calling a suicide prevention crisis line and visitors to an online crisis chat service
- Connected callers/chat visitors to resources
- Wrote reports using iCarol software

**Resident Assistant at Rosewood Santa Monica Eating Disorder Treatment Center**

July 2015 - July 2016

- Supervised clients in a transitional living setting
- Crisis management
- Provided transportation for clients in company vehicle
- Grocery shopping with clients

## RESEARCH EXPERIENCE

**Staff Researcher at UCLA's Youth Stress and Mood Program**

September 2016-September 2017

- Performed in-person and telephone assessments of adolescent participants and their participating family members in an ongoing Sleep and Emotion Regulation (SER) study that explored the connection between sleep and emotion regulation.
- Trained in the following measures: SASII, KSADS, SSRS, CASA, and THI.

**Certified Assessor at UCLA's Youth Stress and Mood Program**

October 2014 - July 2016

UCLA's Youth Stress and Mood Program, Los Angeles, CA

- Performed in-person and telephone assessments of participants in CARES, a study associated with Marsha Linehan that explored the efficacy of DBT in the treatment of adolescents with a history of suicide attempts and non-suicidal self-injury

**Research Assistant at UCLA's Youth Stress and Mood Program**

October 2014 - July 2016

- Assisted with studies funded by the NIMH
- Created online survey templates using Qualtrics and managed survey distribution
- Recruited adolescents with a history of suicide attempts and self-injury for participation in ongoing studies
- Corresponded with participants and their families regarding their participation

## ASSESSMENT SKILLS

**Structured Interviews** University of WA Risk Assessment Protocol (UWRAP) Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) Suicide Attempt Self Injury Interview (SASII) Structured Clinical Interview (SCID) Columbia Suicide Severity Rating Scale (C-SSRS)

UCLA PTSD Index (Child/Parent Version) Child and Adolescent Services Assessment (CASA) Treatment History Interview (THI)

**Neuropsychological, Cognitive, and Emotional Assessments** Wechsler Adult Intelligence Scale-Fourth Edition (WAIS-IV) Wechsler Abbreviated Scale of Intelligence | 2nd Ed (WASI-II) Wechsler Intelligence Scale for Children (WISC-V) Rorshach Inkblot Test Wide Range Achievement Test (WRAT-4) Bender-II Rey Auditory Verbal Learning Test (RAVLT) Trail making Test Controlled Oral Word Association Test (COWAT) Beery Visual-Motor Integration Test-Sixth Edition (VMI-6) Implicit Association Test (IAT) Mirror Tracing Persistence Task - Computer Version (MTPT-C) Woodcock Johnson IV Tests of Achievement Barkley ADHD Forms Brief Rating Inventory of Executive Function Conners Continuous Performance Test 3rd Edition (CPT-3) Conners Continuous Auditory Test of Attention (CATA) The Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) The Integrated Visual and Auditory (IVA) Continuous Performance Test (CPT) The Rey 15-item memory test

**PROFESSIONAL PRESENTATIONS**

**Gamboa, J.** (2018). Resource for a Brief Early Somatic Intervention to Reduce Symptoms of Post-Traumatic Stress Disorder for Victims of Violent Crime in Acute Hospital Settings in Southeast Los Angeles.

Hershfield A., Wang P., **Gersh J.,** & Anderson, N. (2016). A comparison of SAFETY and TAU outcomes in suicidal adolescents.

Wang P., **Gersh, J.**, Hershfield A, & Anderson, N. (2016). Mindfulness as a predictor for depression in young adults.

**Gersh, J.**, Hershfield A., Wang P., & Anderson, N. (2016). Life Stress and Daily Hassles in NSSI and Disordered Eating in young adults.

**PROFESSIONAL CERTIFICATIONS**

Certification in Trauma Focused Cognitive Behavioral Therapy (TFCBT)—2017

Certification in Trauma Resiliency Model Level 1—2018

**PROFESSIONAL MEMBERSHIPS** American Psychological Association

**PROFESSIONAL ACTIVITIES**

**Student Ambassador for Society for Humanistic Psychology (APA Division 32)**

May 2018 - May 2019

- Served as a liaison between Division 32 and Pepperdine University to share information about what students with an interest in Humanistic Psychology need to feel better prepared and more confident to move into the professional world
- Attended conferences online and in-person to help promote the Humanistic community

**Pepperdine Psy.D Steering Committee Member**

May 2018 - May 2019

- Attended steering committee meetings with faculty to express concerns and desires for improvement of the PsyD program
- Served as an intermediary council between administration and students
- Initiated and encouraged activities for the cohesion and general good of the student body
- Encouraged service and community outreach

# ABSTRACT

The goal of this dissertation was to create an intervention resource guide containing recommendations that can be utilized by the South Los Angeles Trauma Recovery Center (SLATRC) to implement a brief early somatic intervention for victims of violent crime in acute hospital settings in Southeast Los Angeles. It was decided that an intervention based upon the Trauma Resiliency Model/Community Resiliency Model (TRM/CRM) would best fit the needs of the population. First, a systematic literature review was conducted to increase the efficacy of the resource by gathering information on similar interventions. The specific questions guiding this review were as follows: (1) What are the components of a successful somatic intervention for the treatment of PTSD? (2) What therapeutic/client/systemic factors contribute to a somatic intervention's effectiveness in treating trauma? (3) What factors contribute to reduced effectiveness? (4) What are the potential benefits and limitations of somatic interventions for treating trauma in a hospital-based setting?

Literature to guide resource creation was systematically searched for using a strategy informed by the Joanna Briggs Institute (JBI) approach, an evidence-based systematic review process for healthcare research developed by the Joanna Briggs Institute. After reviewing available review protocols, the reviewer selected elements of the JBI approach that seemed to best suit the needs of this project. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was selected as the review protocol. A PRISMA checklist was utilized by the reviewer to guide the systematic literature review process. Data from eligible and relevant studies were extracted and stored in a data table. There was emphasis on data that could be used to answer this project's research questions. Results from the systematic literature review guided the creation of the proposed resource. The recommendations are intended to be utilized by

professional and paraprofessional staff at the SLATRC and will be distributed in the form of a training manual.

After the resource creation stage Gabriela Ochoa, LMFT, the Coordinator of SLATRC, reviewed the proposed resource and provided feedback to the author. Elaine Miller-Karas LCSW, an expert in somatic interventions for trauma and the executive director and co-founder of the Trauma Resource Institute, served as the second external reviewer. External reviewers provided feedback based on the review form which asked them to rate on a 1-5 scale: how user-friendly the resource is, whether the instructions are clear and easy to follow, how viable and sustainable the manual is, and how consistent it is with current policies at the St. Francis trauma unit OR current knowledge in the field of somatic interventions for trauma. In addition, they were asked to give their opinion on the manual's strengths, any potential barriers to implementation, whether the philosophy and approach of the resource is consistent with the aims of SLATRC, and whether interventions are culturally sensitive and relevant to target population. Feedback from reviewers was implemented in the resource.

# Chapter 1: Statement of Problem

## Introduction

As Bessel van der Kolk (2014) observed, “In today’s world, your zip code even more than your genetic code determines whether you'll lead a safe and healthy life” (p. 328). Neighborhood context has been repeatedly associated with overall health status for the people who call that neighborhood “home” (Kamimura et al., 2014). Increased vulnerability for developing Post Traumatic Stress Disorder (PTSD) is associated with neighborhood-level factors such as exposure to violence, ethnic minority group membership, socioeconomic disadvantage, and reduced educational opportunities (Baglivio, Wolff, Epps, & Nelson, 2017). All of these neighborhood-level factors are present in Southeast Los Angeles, where exposure to violence is disproportionately higher than any other region in Los Angeles County. Neighborhood context affects an individual’s likelihood of being exposed to adverse childhood events or ACEs (Baglivio, et al., 2017), because child maltreatment is more concentrated in disadvantaged neighborhoods (Baglivio, et al., 2017; Jones, Foster, Forehand, & O’Connell, 2005). Increased risk for traumatization leads to higher rates of PTSD affecting individuals within the community (Violence Intervention, 2017). These neighborhood-level factors are also connected to barriers to treatment to address PTSD symptoms (van der Kolk, 2014). For a myriad of reasons, ethnic minority groups such as Latinos and African Americans tend to underutilize mental health resources (Kouyoumdjian, Zamboanga, & Hansen, 2003; Murry, Heflinger, Suiter, & Brody, 2011), because of which traumatized community-members in Southeast LA may not be connected with appropriate treatment. One reason for this gap in mental health coverage could be cultural differences in symptom presentation (Liefland, Roberts, Ford, & Stevens, 2014). Ethnic minority populations tend to express symptoms of trauma somatically, which reduces the likelihood of being connected to mental health services (Escobar et al., 2010; Kamimura et al., 2014). Given the unique intersections of culture, risk

factors, and symptom presentation, somatic interventions could be beneficial when working with PTSD sufferers in Southeast Los Angeles.

**Symptoms of Post-Traumatic Stress Disorder**

The fifth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) lists the following criteria for a diagnosis of PTSD:

- Criterion A (one required): The person was exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence, in the following way(s): Direct exposure; witnessing the trauma; learning that a relative or close friend was exposed to a trauma; or indirect exposure to aversive details of the trauma, usually in the course of professional duties (e.g., first responders, medics).
- Criterion B (one required): The traumatic event is persistently re-experienced, in the following way(s): unwanted upsetting memories; nightmares; flashbacks; emotional distress after exposure to traumatic reminders; physical reactivity after exposure to traumatic reminders.
- Criterion C (one required): Avoidance of trauma-related stimuli after the trauma, in the following way(s): trauma-related thoughts or feelings; trauma-related reminders.
- Criterion D (two required): Negative thoughts or feelings that began or worsened after the trauma, in the following way(s): inability to recall key features of the trauma; overly negative thoughts and assumptions about oneself or the world; exaggerated blame of self or others for causing the trauma; negative affect; decreased interest in activities; feeling isolated; difficulty experiencing positive affect.
- Criterion E (two required): Trauma-related arousal and reactivity that began or worsened after the trauma, in the following way(s): irritability or aggression; risky or

destructive behavior; hypervigilance; heightened startle reaction; difficulty concentrating; difficulty sleeping.

- Criterion F (required): Symptoms last for more than 1 month.
- Criterion G (required): Symptoms create distress or functional impairment (e.g., social, occupational).
- Criterion H (required): Symptoms are not due to medication, substance use, or other illness. (American Psychiatric Association, 2013)

DSM-5's criteria for a diagnosis of PTSD may not sufficiently capture the clinical presentation when trauma is expressed somatically. Trauma has been correlated with numerous adverse health effects (van der Kolk, 2014; Maté 2011; Felitti et al., 1998), and somatic symptoms for which there is no clear medical explanation are not uncommon in traumatized children and adults (van der Kolk, 2014). The most common physical complaints among individuals with trauma presenting in an outpatient medical setting include: generalized pain, headache, fatigue, and gastrointestinal distress (Eisenman et al., 2008; Loeb et al., 2017). Other somatic symptoms associated with PTSD include poor appetite, dizziness, high blood pressure, low blood pressure, high blood sugar, asthma, stomach ulcer, gastritis, constipation, high cholesterol, arthritis, and liver and heart problems (Eisenman et al., 2003).

**Prevalence and Risk Factors**

It is unarguable that PTSD causes significant distress and impairment for those who are afflicted by it (Kessler et al., 2017). It also creates a public health burden (Shih, Schell, Hambarsoomian, Marshall & Belzberg, 2010) and is related to increased disability and reduced ability to participate in the workforce (Kessler et al., 2017). To compound matters, the prevalence of PTSD in Los Angeles County may tax available resources to provide services to treat it (Shih et al., 2010), which would disproportionately affect lower SES areas like Southeast

Los Angeles. Although some cases of PTSD may remit in a matter of months, PTSD symptoms tend to persist longer than 6 months (Kessler et al., 2017). Even in the case of sub-threshold PTSD, in which the individual is experiencing symptoms of trauma but does not meet full criteria, individuals experience significant distress, impairment, and comorbidity with substance abuse and other mental health conditions.

Research indicates that exposure to trauma is unfortunately extremely common; the vast majority of the population is exposed to trauma at some point in their lifetime (Kessler et al., 2017). 70.4% of respondents to WHO World Mental Health (WMH) surveys reported experiencing trauma in their lives. However, only a small percentage of people who experience trauma will later develop PTSD. Risk for developing PTSD after trauma exposure appears to be mediated by sociodemographic factors and the type of trauma experienced. A study on individuals hospitalized for physical injuries sustained as a result of trauma indicate that African American and Latino populations have higher rates of PTSD compared to non-Hispanic Caucasians (Shih et al., 2010). Other factors that are correlated with increased likelihood for developing PTSD include: lower level of education, lower income (Shih et al., 2010), and a history of prior trauma (Shih et al., 2010; Kessler et al., 2017).

PTSD risk is elevated in cases when the person has experienced interpersonal violence (Kessler et al., 2017). According to the Los Angeles Police Department (Southeast Crime Statistics, 2017), there has been a 32% increase in violent crime in Southeast Los Angeles over the past year. Individuals hospitalized in Los Angeles County trauma centers after physical acts of violence have been shown to be at an increased risk for developing PTSD (Shih et al., 2010). In surveys of injured survivors in a hospital setting, between 10% to 40% developed symptoms of PTSD over the course of the year after their injury (Zatzick, Russo, & Katon, 2003; Shih et al., 2010). PTSD following a physical trauma is associated with impaired physical functioning, disability, and lower self-reported quality of life (Shih et al., 2010). Interpersonal violence has been linked to the highest risk for PTSD of all the factors that have been studied (Kessler et al.,

2017). Specifically, intimate partner sexual violence and sexual assault account for some of the highest prevalence rates of PTSD in the population.

These rates indicate that disadvantaged neighborhoods like Southeast Los Angeles, which are associated with increased exposure to community violence and compounded interpersonal violence (Baglivio, et al., 2017), are also at increased risk for PTSD. Higher rates of traumatization in the community lead to higher rates of PTSD (Hunt, Margens & Belcher, 2011; Scott, 2007). Trauma then results in more trauma, because prior trauma history has been shown to be predictive of both future trauma exposure and future PTSD risk (Kessler et al., 2017). Also, perpetrators of violence are more likely to have experienced trauma themselves (Baglivio, et al., 2017; Xue, Lin, Sun, & Cao, 2017). As van der Kolk observed, “trauma breeds further trauma because hurt people hurt other people” (van der Kolk, 2014, p. 328).

Trauma has been shown to affect not only those directly exposed to it, but those around them as well (van der kolk, 2014). PTSD can be transmitted generationally, as evidenced by Michael Meaney’s study of newborn rat pups and their mothers (van der Kolk, 2014). The frequency with which mother rats in the study licked their newborn pups was shown to affect brain chemicals involved in the body’s stress response. It also showed that rat pups with attentive mothers, who licked more often, tended to produce lower levels of stress hormones after being subjected to a stressful situation. They recovered more quickly and performed better at memory tasks. Generational transmission of PTSD is further evidenced by the fact that children of holocaust survivors have been shown to be at increased risk for developing PTSD after trauma exposure. This could be related to epigenetic findings that life events can change the behavior of genes, and that altered genetic patterns can be passed onto offspring. In cases of generational trauma, future generations might be left with genetic vulnerabilities that decrease resilience when faced with further trauma exposure.

**Barriers to Treatment of PTSD in Southeast LA**

Many of the residents who call Southeast Los Angeles their home are ethnic minorities. The results of the 2010 census showed that 80.26% of Southeast LA residents identify as Hispanic and 18.49% identify as African American. Ethnic minority group membership is associated with a higher rate of Adverse Childhood Experiences (ACE) exposure, including interpersonal and community violence, as well as a higher rate of suffering from the adverse effects of ACE exposure (Eisenman et al., 2008; Jones, et al., 2005; Slack, Font, & Jones, 2017). Evidence suggests that there may be a higher prevalence rate of PTSD and greater severity of PTSD in Latino populations (Benuto & Bennett, 2015). Almost 70% of urban African American children in a study by Bell and Jenkins had witnessed a shooting and almost half of urban African American children surveyed in Bell's study had witnessed a murder (Jones, et al., 2005

However, despite the high rates of stress and mental illness (Murry et al., 2011; Smith, 2006), substantial research indicates that Latino (Kouyoumdjian et al., 2003) and African American populations tend to underutilize mental health resources (Murry et al., 2011). This could be caused by a myriad of factors including but not limited to cultural beliefs about mental illness and mental health treatment (Liefland et al., 2014; Eisenman et al., 2008; Alegría et al., 2002; Murry et al., 2011; Smith, 2006), a history of oppression and economic disadvantage (Smith, 2006), stigma against mental health (Murry et al., 2011), and language/cultural/SES differences between clients and mental health providers (Smith, 2006). Underutilization of mental health services among the residents in Southeast Los Angeles could also be caused by lower detection of distress due to differences in symptom presentation (Liefland, et al., 2014). When trauma expresses itself somatically, there is a reduced likelihood of the individual being connected to mental health services, because both patients and physicians are more likely to seek medical explanations for their symptoms (Escobar et al., 2010; Kamimura et al., 2014).

Neighborhood violence is associated with a higher probability that individuals will present with somatic symptoms of trauma as compared to internalizing or externalizing expression of trauma (Jones, et al., 2005). One reason for this could be that somatic symptoms are seen as a more socially acceptable way for low-income urban children to express their distress. Somatic symptoms may be reinforced because it elicits concern from caregivers. They might also have the added benefit of allowing the child to avoid danger in their neighborhood and school by giving them a reason to stay home. In comparison, internalizing symptoms such as crying or becoming anxious may result in bullying and increased victimization (Jones, et al., 2005). Externalizing symptoms such as acting out aggressively may result in punishment.

Ethnic minorities including Latino (Liefland et al., 2014; Escobar et al., 2010) and African American (Jones, et al., 2005) populations tend to present with a greater number of somatic symptoms compared to other populations (Escobar et al., 2010). Studies show that low-income urban African Americans may be more likely than other ethnic groups to respond to chronic neighborhood stress with physical rather than psychological symptoms (Jones, et al., 2005). In a study on community violence and somatic complaints in African American children, participants who had experienced community violence had a 28% increased risk of appetite problems, a 94% increased risk of sleeping problems, a 57% increased risk of headaches, and a 174% increased risk of stomachaches (Bailey et al., 2005). African Americans may be up to 51% more likely to endorse poor general health after ACE exposure than Caucasians (Slack et al., 2017). Mexican-American women in a Los Angeles community sample were more likely to report somatic symptoms associated with mental health conditions as compared to non-Mexican American women (Escobar, Burnam, Karno, Forsythe & Golding, 1987). In Latino populations, Alexithymia, which is characterized by impaired ability to differentiate feelings from bodily sensations, is correlated with reduced willingness to seek mental health treatment (De Melo & Aliyah, 1998). Alexithymia is associated with an increased chance of receiving an inaccurate

diagnosis even when underserved populations do seek out and are connected to mental health resources (Smith, 2006).

Economic disadvantage and lack of educational opportunities are also associated with increased likelihood for somatic symptoms (Escobar et al, 2010), especially following ACE exposure (Slack et al., 2017). Both of these risk factors affect traumatized individuals in the Southeast Los Angeles area, where 75% of residents are living in extreme poverty (Plan for a Healthy Los Angeles, 2015) and only 4% of residents have a bachelor's degree or higher. Socioeconomic status (SES) may further mediate health disparities for ethnic minority groups (Slack et al., 2017). Adults in poverty are five times more likely to report adverse health outcomes as opposed to those with higher SES. Lack of financial resources is correlated with lack of health insurance (Kamimura et al., 2014), reduced time availability (Murry et al., 2011), and transportation difficulties related to traveling long distances on public transportation. Free clinics in low SES areas are less likely to provide adequate mental health resources (Kamimura et al., 2014). Additionally, financial barriers prevent families from being able to relocate to neighborhoods with lower rates of neighborhood violence (Jones, et al., 2005)

**Bridging the Gap**

The South Los Angeles Trauma Recovery Center (SLATRC) was created in 2016 to address this problem through provision of mental health services to victims of violent crime in the Southeast Los Angeles area. Victim advocates begin building relationships with victims while they are still in the hospital in order to help victims heal in the aftermath of trauma and facilitate connection to community resources. However, individuals fall through the cracks when they are unable to successfully connect to mental health services post hospital discharge, when they return to the reality of their day-to-day lives with untreated PTSD. This is consistent with research that indicates low mental health service utilization and high unmet need for mental health services after injured trauma victims are discharged from the hospital (Shih et al., 2010).

Of these individuals who are not connected with mental health resources following discharge from the hospital, many may express their PTSD somatically. Somatic symptoms have been shown to be greater in number and severity in injured patients with higher levels of PTSD, even after the analyses were adjusted for injury severity and medical comorbidity (Zatzick et al., 2003). The aim of this project is therefore to bridge the gap between hospitalization and connection to mental health services so as increase SLATRC's ability to reduce symptoms of PTSD in this population.

# Chapter 2: Background

## Perceived Mind-body Dualism and its Effect on Psychotherapy

René Descartes, the 16th and 17th Century father of modern philosophy, is perhaps best known for his famous maxim “cogito ergo sum,” which translates to “I think, therefore I am” (Hamilton & Hamilton, 2015, p.1). This catchy maxim was created to communicate the idea that our thinking mind, the *res cogitans*, is a distinct and separate entity from our physical body, the *res extensa* (Hamilton & Hamilton, 2015). He further believed that our rational, thinking mind is constantly at risk of being misled and deceived by the raw, confusing bombardment of stimuli from our animalistic physical forms. It is therefore necessary for the mind to be in a perpetual state of doubt when interpreting the experience of the body. He perceived our bodies not as us, but as something other than us: a prison of flesh from which there is no escape but death. Descartes’ theory, which has come to be known as Cartesian dualism or mind-body dualism, has persisted from the 16th century to the 21st century (Hamilton & Hamilton, 2015; Mudrik & Maoz, 2014; Nierenberg, 2009). In fact, it has become so commonplace that it is frequently taken for granted as reality.

Cartesian dualism has been intricately and undeniably woven throughout the evolution of psychology in Western society (Dazzan & Barbui, 2015). It has shaped the way we conceptualize the connection between our bodies, brains, and minds: particularly as these concepts relate to psychosomatic illness (Rangell, 2000; Gubb, 2013). Recent developments in psychology such as advances in the fields of psychoneuroimmunology (Hamilton & Hamilton, 2015; Rangel, 2000) and neuroscience (Mondelli & Pariante, 2015) have resulted in a divergence from psychology’s dualistic roots. However, despite the increasing popularity of mind-body therapies that have grown out of alternative theories (Harrington, 2008; Viola, 2014), psychology has yet to fully divorce itself from the Cartesian dualistic perspective (Hamilton & Hamilton, 2015; Mudrik & Maoz, 2014; Nierenberg, 2009).

Despite recent efforts towards integrated care, Cartesian dualistic beliefs continue to put up a wall between psychological and physiological illnesses (Dazzan & Barbui, 2015). Cartesian Dualism also leads to a social devaluing of treatment for mental health compared to physical health, resulting in inadequate funding for clinical care and research (Nierenberg, 2009). The National Institute of Mental Health has the lowest funding of all of the institutes. Furthermore, dualistic assumptions are damaging in that they encourage stigmatizing explanations of the causes of mental illness. If the seeds of mental illness are mental instead of physical, the implication is that mental health is something individuals should have control over. Descartes portrayed the body as animalistic and deceitful, while the thinking, rational mind is within one's control. In this way, people with mental illness are suspected to be responsible for their own suffering.

Mind-body dualistic assumptions are also detrimental to everyone who falls through the cracks in the divide between mental health and the medical model (Nierenberg, 2009). There is an overall lack of societal knowledge about physical pain as a symptom of trauma, which can result in somatic symptoms being treated as medical problems while the psychological aspect is neglected (Leitch, 2007). As a result, PTSD may be "hiding" in primary care settings (Kamimura et al., 2014). Individuals tend to seek medical explanations for PTSD when it expresses somatically (Eisenman et al., 2008; Loeb et al., 2017), and physicians are often not trained to assess for physiological symptoms of trauma (Loeb et al., 2017). Additionally, the etiology of somatic trauma symptoms is poorly understood, even among health care providers.

**Somatic Impact of Trauma**

Physical manifestations of psychological distress are a visible demonstration that the barriers between mind, brain, and body, if such barriers even exist, are extremely porous. Advancements in the field of neuroscience has led to the development of new perspectives on trauma and its relationship to mind-body dualism (van der Kolk, 2014). The neuroscience

revolution challenges the dualistic bias in our field and points to somatic interventions as the future of PTSD treatment. Research indicates that traumatic stress is not all in one's head, it is held in people's bodies and has physiological effects (Escobar et al., 2010; van der Kolk, 2014; Levine, 2010; Maté, 2011). A history of trauma leaves an imprint on the mind, brain, and body that affects how the individual functions in the present. In fact, van der Kolk (2014) asserts that the nervous system is so altered by trauma that traumatized individuals are effectively experiencing the world with a different nervous system. For them, the trauma in their past is still happening in the present. Some of the known physiological effects of trauma include changes to the amygdala, the nervous system, the hypothalamic pituitary adrenal (HPA) axis, the immune system, and the vagal system (van der Kolk, 2014; Montgomery, 2013).

To understand the physiological effects of trauma, one must first understand the body's stress response. The stress response begins in the amygdala: a small, almond-shaped structure in the limbic area of the brain that is located beneath the temporal lobes on both sides (Montgomery, 2013). The amygdala processes intense emotions such as fear and warns us of impending danger (Montgomery, 2013; van der Kolk, 2014). It is also involved in facial recognition, attachment, and arousal (Montgomery, 2013). In men, it can play a role in aggression and sexual arousal. The right amygdala is particularly involved in this process, because the right hemisphere is dominant over the left when it comes to emotional experience. The evolutionary advantage of the amygdala is that it provides a rapid response to danger which can help ensure survival. However, chronic stress and trauma can affect amygdalar functioning in ways that are decidedly disadvantageous. Chronic stress and trauma may cause an over-reliance on the amygdala to respond to threat, as well as an underdevelopment of more slowly-maturing structures of the brain in the limbic and higher cortical systems. These more slowly-maturing structures provide a slower but more thoughtful response to threat. When they develop poorly or never develop at all, traumatized individuals may experience deficits in the ability to discriminate among levels of threat as well as the capacity to fine-tune responses to

situations. In other words, the amygdala's ability to act first and think later can be helpful when running for one's life from a tiger, but less helpful in determining how to respond in more nuanced interpersonal situations.

The traumatized amygdala may become chronically over-reactive, under-reactive, or some combination of the two (Montgomery, 2013), like a fire alarm that goes off when one accidentally burns toast, or else never goes off even in the face of an inferno (van der Kolk, 2014). When traumatized people are triggered by external or internal cues associated with traumatic experiences, the amygdala reacts with alarm. When the amygdala perceives danger, it sends a distress signal to the hypothalamus, the command center of the brain, which communicates the danger to the rest of the body through the central nervous system (van der Kolk, 2014). The central nervous system has two major divisions, the first of which consists of the brain and the spinal cord, and the second of which is the peripheral nervous system (Montgomery, 2013). The peripheral nervous system is divided into two: the somatic nervous system and the autonomic nervous system. The autonomic nervous system is divided even further into the sympathetic and parasympathetic branches. The sympathetic nervous system is responsible for excitatory or up-regulating functions while the parasympathetic is responsible for inhibitory or down-regulating functions. The autonomic nervous system is like the body's thermostat, regulating the internal state of the body to maintain homeostasis. In the case of threat, the external situation is prioritized over the body's internal state and the body mobilizes its resources for the fight/flight/freeze response. Chronic stress and trauma can result in dysregulation of the autonomic nervous system (Montgomery, 2013), which is why for individuals with PTSD, the fight/flight/freeze signals continue after the danger has passed instead of returning to equilibrium (van der Kolk, 2014). Like Maier and Seligman's studies about dogs exposed to "inescapable shock," people with PTSD experience a form of learned helplessness. Traumatized bodies learn that danger is inescapable, and the state of hypo/hyper arousal persists.

When the amygdala communicates danger to the nervous system, the HPA axis, which is the body's stress response system, also becomes involved (Montgomery, 2013; Xue et al., 2017). Via the connection between the endocrine system and the central nervous system (Xue et al., 2017) the HPA axis activates stress hormones and nerve impulses that increase blood pressure, heart rate, and oxygen intake (Montgomery, 2013). While adaptive in the face of life-threatening danger, traumatized people continue to secrete large amounts of stress hormones long after the danger has passed. The same stress responses triggered chronically causes harm and even permanent damage (Maté, 2011). Increased adrenaline over long periods of time can have a number of deleterious effects (van der Kolk, 2014), including memory and attention problems, irritability, and sleep disorders. Chronic stress can lead to dysregulation of the HPA axis (Xue et al., 2017), and the physiological changes caused by dysregulated endocrine (Loeb et al., 2017) and nervous system functioning (Loeb et al., 2017; Thayer & Brosschot, 2005) can impair the immune system and contribute to long-term health issues (van der Kolk, 2014; Maté, 2011). Recent evidence suggests that our immune system and our central nervous system functioning are more intertwined than previously thought (Kipnis, 2018). Jonathan Kipnis, who studies the connection between the immune system and the central nervous system, theorizes that the role of the immune system is to sense microorganisms and communicate that information to the brain, making the immune system our seventh sense, our sixth sense being the vagal system (Kipnis, 2018). This is consistent with van der Kolk's assertion that our immune system does not exist in isolation from our lived experience (van der Kolk, 2014). The connection between these two major systems in our bodies is demonstrated by a study which showed that immune defenses were significantly suppressed in medical students experiencing increased stress due to final exams (Maté, 2011). It could also explain why survivors of incestual abuse are more likely to have impaired immune system functioning (van der Kolk, 2014).

In addition to the effects of trauma on the amygdala, nervous system, HPA axis, and immune system: trauma also affects our bodies' "sixth sense" (Kipnis, 2018), the vagal system (Montgomery, 2013). Stephen Porges's Polyvagal Theory challenges the previously-held belief in the autonomic nervous system as the primary stress management system. He argues that vagal circuitry also has a role in adaptive and, in the case of trauma, maladaptive reactions to stress. The vagus is a cranial nerve that connects the brain to the gastrointestinal tract, respiratory tract, heart, and abdominal viscera. The evolutionarily older vagal branch, the dorsal vagal system, immobilizes behavior in the face of threat to the point that social interaction is severely inhibited. The evolutionarily newer vagal branch, the ventral vagal system, inhibits behaviors while preserving the capacity for social interaction. Ideally, the brain will inhibit the dorsal vagal system and utilize the ventral vagal system to respond to threat without compromising social capacity. If the ventral vagal system is unable to manage the stress, the dorsal vagal system is employed. Brain structures such as the amygdala that have become over-sensitized to danger in the case of chronic stress or trauma may assume danger in cases when there is none, thereby engaging the dorsal vagal system too quickly and resulting in a severely inhibited state. The use of the more conservative defense system affects the ability of the vagal system to regulate social engagement behaviors such as affect regulation, spontaneous social behavior, social awareness, affect expressivity, prosody, and language development. Because the vagal system also regulates cardiac activity, dysregulation can even result in cardiac health risks.

The physiological effects of trauma are caused by the body's natural, biological response to stress and danger, which is believed to transcend culture (Miller-Karas, 2015). However, culture may mediate how trauma symptoms are expressed. Research indicates that Latino (Liefland et al., 2014; Escobar et al., 2010) and African America (Jones, et al., 2005) populations, which are the majority of those served by SLATRC, are more likely to experience physical as opposed to psychological symptoms of trauma (Jones, et al., 2005). Alexithymia,

which is defined as an inability to identify and describe one's own emotional experience (van der Kolk, 2014), is more prevalent in Latino populations (De Melo & Aliyah, 1998). Alexithymia further compounds the physiological effects of trauma because alexithymic individuals may respond to trauma, not by noticing it and naming it, but by translating it into physical symptoms (van der Kolk, 2014).

Traumatized people chronically feel unsafe in their own bodies. They are constantly bombarded by visceral warning signs, and as a result, they learn to ignore their gut feelings, which may come to be associated with negative emotions and cognitions related to the trauma. Compared to the rest of the population, traumatized children and adults have a higher incidence rate of somatic symptoms for which there is no clear medical explanation. This could explain why traumatized clients are more likely to suffer from unexplained medical illnesses. Research has shown that people who have been abused as children often feel sensations such as abdominal pain that have no obvious physical cause. Trauma has been linked to numerous chronic medical conditions, including fibromyalgia, chronic fatigue, autoimmune disorders, migraines, asthma (van der Kolk, 2014), interstitial cystitis (Peters, Carrico, Ibrahim, & Diokno, 2008; Nickel et al., 2011), and more (Maté, 2011). Over half of patients with interstitial cystitis, a painful chronic bladder condition, reported a history of abuse (Peters et al., 2008). Traumatized children have fifty times the rate of asthma as their non-traumatized peers (van der Kolk, 2014). Additionally, individuals who do not have a friendly relationship with their bodies may learn to rely on external regulation strategies such as medication and substance abuse. This is consistent with research findings that indicate a correlation between PTSD and substance use (Durham et al, 2016). It is also consistent with the correlation between ACEs and high-risk behaviors such as risky sexual behaviors, self-injurious behavior, and suicidal behavior, as such behaviors can be an attempt to cope with a dysregulated nervous system resulting from trauma (Felitti et al, 1998; van der Kolk, 2014). ACEs are more prevalent in disadvantaged neighborhoods due to compounded vulnerability factors (Baglivio, et al., 2017; Jones, et al.,

2005), which puts individuals in the Southeast LA community at an increased risk of sustaining trauma that results in a dysregulated nervous system.

**Limitations of Traditional Psychotherapy for Treatment of Trauma**

No treatment modality has been shown to work across the board for all individuals suffering from PTSD (Brom et al., 2017); however, top-down interventions— or interventions that prioritize the neocortex over the evolutionarily older brain structures— may have limited efficacy in treating the impact of trauma on the nervous system (van der Kolk, 2014; Levine, 2010). Traditional psychotherapy has a top-down approach to treatment (van der Kolk, 2014; Leitch, 2007) in that it primarily targets talk, insight, and emotions without exploring how trauma is held in the body (Leitch, 2007). While finding words to communicate trauma can be transformative, it does not necessarily erase physiological trauma residue. Only about one in three traumatized individuals show reduction in PTSD symptoms after being treated from a Cognitive Behavioral Therapy (CBT) perspective (van der Kolk, 2014). This indicates a need for additional treatment options to be available for individuals for whom, for various reasons, CBT treatments may be less effective.

Another barrier that could prevent traumatized individuals from being able to engage in traditional talk therapy is the alexithymic effect, or the “wordlessness” of trauma (van der Kolk, 2014; Leitch, 2007; Levine & Kline, 2011). Neuroscience research indicates that Broca’s area, one of the speech centers of the brain, goes offline when a traumatic flashback is triggered. In other words, PTSD flashbacks suppress the ability to put trauma into words (van der Kolk, 2014). This is consistent with clinical observations that traumatized individuals tend to report not having the words to describe their trauma or feeling numb (Levine & Kline, 2011). Images of past trauma have been shown to activate the right hemisphere and deactivate the left (van der Kolk, 2014). This results in the shut-down of more advanced systems of the brain such as executive functioning, leaving only what is necessary for survival (Levine, 2010; Leitch

Vanslyke, & Allen, 2009). The amygdala hijacks the executive functioning processes of frontal lobe and shuts down the thalamus, which prevents traumatized individuals from remembering an incident as a narrative instead of isolated sensory imprints (van der Kolk, 2014). Alexithymia is more prevalent in Latino (De Melo & Aliyah, 1998) and African American (Smith, 2006) populations, and has been correlated with a reduced willingness to seek mental health treatment (De Melo & Aliyah, 1998).

**Somatic Interventions for Trauma**

Because the impact of trauma on emotions and cognitions is culturally specific, top-down approaches have limited cross-cultural applicability (Leitch, 2007). Bottom-up approaches or somatic interventions to PTSD treatment that target symptoms of trauma in the body are an alternative. Somatic interventions are less culturally specific because the focus is on biological as opposed to purely psychological symptoms (Payne, Levine, & Crane-Godreau, 2015a; Leitch, 2007). The main intervention is to direct the client's attention to internal sensations rather than primarily cognitive or emotional experiences (Payne et al., 2015a) with the aim of changing the person's physiology and healing their relationship to bodily sensations (van der Kolk, 2014) by restoring nervous system functioning to balanced operation (Levine, 2010). Somatic interventions can help traumatized individuals find calm and get in touch with dissociative bodies (van der Kolk, 2014). Examples of somatic interventions designed for the purpose of treating trauma include Somatic Experiencing Therapy (Levine, 2010), and Sensorimotor Psychomotor therapy (Ogden, Fisher, Del Hierro, & Del Hierro, 2015).

Peter Levine's Somatic Experiencing therapy (SE) is an integrative mind-body trauma treatment (Levine, 2010; Leitch, 2007). The goal of SE is to prevent or mitigate damaging effects of trauma in the body (Levine & Kline, 2011) by developing sensory resources and re-establishing self-regulation to help individuals reconnect with their bodies (Levine, 2010; Leitch, 2007). SE views the trauma response not as pathology, but as part of a natural, non-

pathological process that has been interrupted or blocked (Levine, 2010; Leitch et al., 2009; Payne et al., 2015a; Brom et al., 2017). The body discharges survival energy from a biological defensive response to return balance to the autonomic nervous system (Levine, 2010; Payne et al., 2015a; Levine & Kline, 2011). In other words, trauma is a "highly activated incomplete biological response to threat, frozen in time" (Payne et al., 2015a, p. 14). If natural discharge of trauma energy is inhibited, natural resilience is also inhibited (Levine, 2010). Rats allowed to fight each other after a stress-inducing experience recover more quickly than rats who are not allowed to fight (Payne et al., 2015a). Many traumatized individuals have learned to associate awareness of their physicality as unsafe (Levine, 2010; Leitch, 2007) and to fear their own reactions (Levine & Kline, 2011). SE encourages traumatized individuals to heal by welcoming instead of fearing and suppressing physiological trauma response (Levine, 2010).

Pat Ogden's Sensorimotor Psychotherapy (SP) is a holistic way of healing from PTSD that integrates cognitive, affective, and somatic responses to trauma that work together to keep trauma alive in the body (Langmuir, Kirsh, & Classen, 2012; Ogden, Fisher, Del Hierro, & Del Hierro, 2015). Like SE, SP is based on the theory that disruption of normal physiological responses following a trauma leads to PTSD symptoms. It further theorizes that the traumatic event is stored as procedural memory, which involves conditioned sensorimotor responses that are unconscious, resistant to decay over time, and evoked by internal and external cues. Procedural memories of trauma lead to a somatic experience that is associated with negative emotions and maladaptive cognitions, all of which are activated by internal and external cues. This leads to maladaptive responses to present-day experiences because the individual is stuck in the same defensive reactions that were used to in response to past trauma. All of these factors affect the traumatized person's sense of self, interpersonal relationships, and overall functioning in the world. SP teaches mindfulness skills to notice the connection between thoughts, feelings, and physical experiences. Clients are also taught how to be aware of body sensations and verbalize their felt experience. In this way, SP facilitates client's use of their

bodies as a source of information, strength, and pleasure. Using one's body as a coping skill increases the ability to cope in more adaptive ways.

**Brief Early Somatic Interventions**

Somatic interventions implemented immediately following the traumatic experience could reduce the public health burden associated with PTSD (Shih et al., 2010). There is currently a sparsity of research on somatic interventions, and an even greater sparsity of research on brief early somatic interventions. However, preliminary studies on the topic have demonstrated promising results in acute trauma treatment following natural disasters (Leitch, 2007; Leitch et al., 2009). Social workers who were survivors of Hurricanes Katrina and Rita showed a significant reduction of PTSD symptoms after being administered a Trauma Resiliency Model intervention, a brief somatic intervention based on SE therapy (Leitch et al., 2009). Similarly, Tsunami survivors reported reduced symptoms after being administered Trauma First Aide, a brief somatic intervention based on SE therapy which later became known as the Trauma Resiliency Model. The intervention was administered one month after the Tsunami. Although these results suggest that there could be similarly positive results for victims of other types of trauma as well, there have been no studies on brief early somatic interventions for individuals who have experienced interpersonal trauma.

Brief early somatic interventions have been shown to decrease incidence rates of developing PTSD after a trauma and, in cases where the individual does develop PTSD, reduce the severity of PTSD symptoms (Leitch, 2007; Leitch et al., 2009). Brief early-intervention somatic approaches are also ideal because they can be provided expediently and in a variety of locations (Leitch, 2007). A brief early somatic intervention can be administered in 40-60 minutes in any setting in which a brief treatment is appropriate. They are cost-effective and can take effect more quickly than interventions that are implemented when more time has passed between the traumatic event and the treatment (Leitch, 2007). They can be used in situations

when it is not possible to provide more than one or two sessions (Leitch et al., 2009), and could help avoid over-reliance on pharmacological solutions to acute trauma symptoms (Leitch, 2007). They could also be used as a compliment to cognitive treatment models (Leitch, et al., 2009). For all of these reasons, a brief early somatic intervention could be a useful tool in treating trauma for victims of violent crime in Southeast Los Angeles. It could be effectively and inexpensively administered to victims while they are still recovering in the hospital. Another benefit of brief early interventions is that even if the victims cannot be connected to mental health services post hospital discharge, they will have already received some initial treatment for their PTSD symptoms.

**Purpose of this Project**

The purpose of this project was to create a resource for a brief early somatic intervention for victims of violent crime in acute hospital settings in Southeast Los Angeles. This was accomplished by (1) conducting a systematic review of the literature on the topic and (2) utilizing findings from the systematic literature review to create a resource for the SLATRC. The overall goal of the resource is to serve as a guideline for professionals and paraprofessionals to administer a brief early somatic intervention to the target population. In this way, the SLATRC can begin to bridge the gap between hospitalization and connection to mental health services so as to better serve the culturally diverse and economically disadvantaged population with which they work.

# Chapter 3: Overview of Methodology

## Objectives and Rationale

The goal of this dissertation was to create an intervention resource guide containing recommendations that can be utilized by the SLATRC to implement a brief early somatic intervention for victims of violent crime in acute hospital settings in Southeast Los Angeles. A systematic literature review was conducted to increase the efficacy of the resource by gathering information on similar interventions. The purpose of this chapter is to describe the literature review strategies and the methodologies for resource development and review that were utilized for this project.

## Research Questions

The specific questions guiding this review were as follows:

(1) What are the components of a successful somatic intervention for the treatment of PTSD?
(2) What therapeutic/client/systemic factors contribute to a somatic intervention's effectiveness in treating trauma?
(3) What factors contribute to reduced effectiveness?
(4) What are the potential benefits and limitations of somatic interventions for treating trauma in a hospital-based setting?

## Review Protocol

For the purposes of this project, Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), was selected as the review protocol. PRISMA is an evidence-based protocol to improve the reporting of systematic review and meta-analyses. A PRISMA checklist and flow diagram were utilized by the reviewer to guide the systematic literature review process regarding somatic interventions for treatment of PTSD

**Reviewers**

This systematic literature review was conducted as part of a doctoral-level dissertation project. The primary reviewer was Jamie Gamboa, M.A., a doctoral-level student enrolled in the Doctorate of Psychology Program at Pepperdine University. The proposed secondary and tertiary reviewers were Helene Diamond, M.A., a doctoral-level student enrolled in the same program, and their faculty mentor, LaTonya Wood, Ph.D. However, due to resources and availability Helen Diamond was no longer able to participate in the process. Dr. Wood selected a sample of articles from review and used the Joanna Briggs Institute (JBI) Critical Appraisal Checklists (Appendix F) to screen for bias in articles selected for inclusion in the review.

**Dates of Review**

The review was conducted between September 2018 and October 2019. Afterwards, the reviewer began utilizing the findings to inform resource creation.

**Eligibility Criteria**

Quantitative and qualitative studies that investigated somatic interventions for the treatment of trauma were considered for review, as well as dissertations and master's theses on somatic interventions for PTSD. In order to find research that was relevant to the target population of this proposal, only studies with participants who are adults (over 18) and who have experienced trauma were included. Studies with participants who are children (under 18) and who have not been exposed to trauma were excluded. Data on participants of all genders, races, religions, and sexual orientations was considered, although there was a greater focus on diverse populations in order to better inform an intervention with multicultural sensitivity and applicability. Only English language literature was included due to the reviewer's linguistic limitations. Additionally, any research published more than 20 years ago was excluded from the review. This decision was informed by a preliminary review of the literature, which yielded

relevant studies during this time frame. Data from studies with both successful and unsuccessful outcomes were considered. Inclusion of studies with unsuccessful outcomes enabled the reviewer to examine factors that contribute to reduced efficacy of somatic interventions in addition to factors that contribute to increased efficacy. Although the proposed somatic intervention is intended to be administered in an acute hospital setting, the preliminary literature review indicated that there is insufficient research on somatic interventions administered in medical settings. Therefore, research on somatic interventions administered in a variety of settings was included in the review.

**Search Strategy**

Literature to guide resource creation was systematically searched for using a strategy informed by the Joanna Briggs Institute (JBI) approach, an evidence-based systematic review process for healthcare research developed by the Joanna Briggs Institute. After reviewing available review protocols, the primary reviewer selected elements of the JBI approach that seemed to best suit the needs of this project. The resulting search strategy was as follows:

First, a preliminary set of key words were used to find potentially relevant studies. These keywords were informed by a preliminary review of the literature, and included:

“Integrated care AND Somatic Symptoms,” “Somatization AND Hispanic,” “Somatization AND Latino,” “Somatization AND Trauma,” “Medically unexplained illness,” “Barriers to treatment of PTSD AND Hispanic,” “Barriers to treatment of PTSD AND Latino,” “Barriers to treatment of PTSD AND African American,” “Barriers to mental health care AND Hispanic,” “Barriers to mental health care AND Latino,” “Barriers to mental health care AND African American,” “Barriers to treatment AND Hispanic,” “Barriers to treatment AND Latino,” “Barriers to treatment AND African American,” “bottom-up AND trauma,” “somatic experiencing therapy,” “sensorimotor therapy,” “community violence, “violent crime,” “community violence,” “interpersonal violence,” “interpersonal trauma,” “Mind Body AND Connection,” “Mind AND

Body," "Mind Body AND Dualism," "ACE Study," "ACE AND Trauma," "ACE AND Somatization," "ACE AND Somatic Symptoms," "ACE AND Hispanic," "ACE and Latino," "ACE AND African American," "ACE AND Minorities," "ACE AND PTSD," "ACE AND Trauma," "Somatic Treatment," "Somatic Treatment AND Trauma," "Somatic Intervention," "Somatic Intervention AND Trauma," "Trauma AND Treatment," "Bottom-up AND Top-down," "Brief AND Somatic Intervention," "Early AND Somatic Intervention," "Brief Somatic Treatment," "Early Somatic Intervention," "Somatic Treatment AND setting," "Somatic Treatment AND Hospital," "Somatic Intervention AND Hospital," "Somatic Treatment AND Acute," "Somatic Intervention AND Acute."

Studies found using combinations of these keywords were reviewed, and the list of key words and phrases were revised as needed for a more in-depth search. Four databases were utilized for this purpose: Psychinfo, Pubmed, Proquest Dissertations and Thesis, and Google Scholar. The American Psychological Institute's Psychinfo database is the largest resource devoted to peer-reviewed literature in behavioral science and mental health, and was therefore selected to yield results relevant to mental health. PubMed is a database for biomedical literature, and includes results from MEDLINE, life science journals, and online books. PubMed was utilized because PTSD often presents in medical settings, and the proposed somatic intervention is intended to be implemented in a medical setting. Proquest Dissertations and Thesis is the most comprehensive collection of doctoral dissertations and master's theses in the world, and was included in the review in order to find dissertations on the topic that may not have been published. Finally, Google Scholar is a database for scholarly literature across a variety disciplines and sources, and was used to broaden the range of search results.

In addition, the aforementioned databases were searched to determine if a systematic literature review already exists on somatic interventions for the treatment of trauma. Reference sections on relevant publications were reviewed for potentially relevant resources, and an

author search was conducted on the names of authors known to have conducted research on somatic interventions.

**Data Collection Process**

Data from eligible and relevant studies were extracted and stored in a data table. There was emphasis on data that could be used to answer this project's research questions. This included data on the composition of a somatic intervention (i.e., what elements are included in the intervention), factors that contribute to increased or reduced efficacy of somatic interventions (i.e., timeline, length of intervention, service delivery setting, cultural and linguistic considerations), and potential strengths and limitations of a somatic intervention (i.e. ease of implementation, cost, skill level and training required for the one implementing the intervention).

The data table included the following columns: name of article/study, date of publication, search terms used, database(s) found on, type of intervention, study design, sample size, participant demographics, type of traumatic event, timing of intervention, length of intervention, service delivery setting, other intervention characteristics, adjunctive interventions used, cultural and linguistic considerations, intervention efficacy, intervention strengths/limitations, and potential for bias.

**Risk of Bias**

Because the goal of this dissertation was to create a resource for a brief early somatic intervention, there was a risk of bias during the review process on the part of the primary reviewer. The primary reviewer may have unintentionally prioritized literature that confirmed her belief in the efficacy of somatic interventions, while disregarding studies that contradicted this belief. The inclusion of two additional reviewers was intended to minimize the effects of this bias by monitoring data collection and random reviews of selected articles throughout the review process. One of the two proposed reviewers was unable to participate, which is a limitation for

this project. The remaining reviewer conducted a review of randomly-selected articles and JBI Critical Appraisal Checklists were used to screen for bias in articles selected for inclusion in the review. Nevertheless, the effects of the primary reviewer's bias should still be considered when evaluating the results of the systematic literature review.

Studies funded by somatic institutes could be another source of bias in the review, since the success of somatic institutes is dependent on demonstrated efficacy of somatic interventions. Studies funded by somatic institutes were not excluded, but the potential for bias was considered in the results. Also, efforts were made to include studies from a variety of sources in order to achieve more balanced results.

**Resource Creation Method**

Results from the systematic literature review guided the creation of the proposed resource, which included recommendations for implementing a brief early somatic intervention in an acute hospital setting in Southeast Los Angeles with victims of violent crime. The recommendations are intended to be utilized by professional and paraprofessional staff at the SLATRC, and will be distributed in the form of a training manual.

The researcher also sought personal and professional experiences that would contribute to her knowledge of somatic interventions. For this purpose, a member of her dissertation committee recommended she attend a training for the Trauma Resiliency Model (TRM), a somatic intervention for trauma created by Elaine Miller-Karas, LCSW and Geneie Everette, PhD (Miller-Karas, 2015). The researcher attended the Trauma Resource Institute's TRM Level 1 training in Los Angeles, California on February 22-24, 2019 (See Appendix E for Certificate of Completion). The training was an invaluable experience from which she received insight and materials that were integrated into the resource. After attending the training, it was decided that the resource would be primarily based upon the Trauma Resiliency Model and the closely related Community Resiliency Model. This was decided largely for practical reasons, since the

researcher was now more knowledgeable about TRM/CRM than other somatic interventions. TRM/CRM was also judged to be a good fit for the proposed intervention because of TRM/CRM's demonstrated utility as a brief early somatic intervention with cross-cultural applicability (Miller-Karas, 2015; Grabbe & Miller-Karas, 2018; Miller-Karas & Leitch, 2009) as well as the fact that it contains easily-learned wellness skills that can be taught by a layperson in a short amount of time (Miller-Karas, 2015).

Additionally, the dissertation committee member recommended the researcher receive somatic therapy in order to cultivate a greater understanding of somatic interventions from a client's perspective. The researcher received psychotherapy on a weekly basis from a therapist trained in somatic interventions from September 2018 to March 2019. The experiences themselves will not be described in this dissertation, but contributed to the researcher's knowledge about somatic interventions.

Lastly, the researcher sought local resources for affordable mental health services in the community for the section of the resource intended to be given to clients. A list of community resources was obtained from Yesenia Rosales, a case manager at SLATRC. These were added for the purpose of facilitating connection to longer-term mental health services after clients are discharged from the hospital.

**Resource Review Method**

After the resource creation stage, two external reviewers reviewed the proposed resource and provided feedback to the author. The first external reviewer was Gabriel Ochoa, LMFT, the coordinator at SLATRC. Elaine Miller-Karas, LCSW, an expert on somatic interventions for trauma and the executive director and co-founder of the Trauma Resource Institute, was asked to serve as the second external reviewer. External reviewers provided feedback based on the review form (see Appendix C). Feedback from the reviewers was utilized to enhance the strength of the resource.

# Chapter 4: Results

## Search Term Revisions

Once the search process was underway, it quickly became apparent that it would be necessary to further narrow down the search terms used in the systematic literature review. The proposed search terms yielded data that was overly similar to data retrieved from the preliminary literature review and not relevant to the goal of answering the research questions and creating the resource. Additionally, although the reviewer originally intended to include studies on top-down interventions for trauma so as to be able to compare their efficacy to bottom-up interventions, this yielded so many results that it was determined to be unfeasible due to time constraints. After consulting with her dissertation chair, the reviewer decided to change the search terms to ones that were more tailored to retrieving data about somatic interventions for trauma. These included the following:

“Brief somatic intervention,” “brief somatic intervention trauma,” “brief early somatic intervention,” “brief early somatic intervention trauma,” “early somatic intervention,” “early intervention trauma,” “trauma resource institute,” “trauma resiliency model,” “community resiliency model,” “somatic experiencing therapy,” “somatic intervention hospital,” “sensorimotor psychotherapy.”

Although the revised search terms were more specific, they also yielded data that was not sufficiently relevant to the goal of this project. The results included numerous studies on dance movement therapy, yoga, music, meditation, touch-inclusive therapies, somatic experiencing therapy, and sensorimotor psychotherapy. Additionally, after attending the TRM training on February 22nd-24th the reviewer made the decision to base the resource primarily on TRM/CRM. It was therefore decided that the systematic literature review should focus primarily on TRM/CRM. After consulting with her dissertation chair a second time, the search terms were again revised. The final search terms included the following:

“Trauma resiliency model,” “Community resiliency model,” “Trauma Resource Institute,” “Elaine Miller-Karas.”

**Search Results**

The first search term yielded 5 results from PsychInfo, 3 results from Pubmed, 20 results from Proquest Dissertations and Theses, and 142 results from Google Scholar. All 5 of the results from PsychInfo were included in the review. 2 of the results from Pubmed were the same as the ones from PsychInfo and 1 new result was included. Of the 20 results from Proquest Dissertations and Theses, 1 was a result that had previously been found from prior searches, 1 was included, and the rest were excluded because they were not studies on TRM or CRM. Of the 142 results from Google Scholar, 4 had previously been found from prior searches. The rest were excluded due to lack of relevance, with the exception of the Trauma Resource Institute’s website (www.traumaresourceinstitute.com). The website contains a list of 6 research articles published on CRM/TRM. Of the 6, 2 had previously been found. The other 4 were included in the literature review. In total, 11 results from the first search term were included in the literature review.

The second search term yielded 5 results from PsychInfo, 20 results from Pubmed, 10 results from Proquest Dissertations and Theses, and 78 results from Google Scholar. The 5 results from PsychInfo were the same 5 results from the first search term. All 20 results from Pubmed were excluded due to lack of relevance. 2 of the 10 results from Proquest Dissertations and Theses were the same as ones from prior searches and the rest were excluded due to lack of relevance. Of the 78 results from Google Scholar, 4 had previously been found and the rest were excluded due to lack of relevance. The second search term yielded no new results for the literature review.

The third search term yielded 2 results from PsychInfo, 2 results from Pubmed, 9 results from Proquest Dissertations and Theses, and 87 results from Google Scholar. One of the

results from PsychInfo had previously been found, but the other was included in the literature review. Both of the results from Pubmed had already been found. Of the 9 results from Proquest Dissertations and Theses, 1 had previously been found and the rest were not relevant and excluded. Of the 87 results from Google Scholar, 2 were new and included in the literature review, 3 had previously been found, and the rest were excluded. In total, the search term added 3 new results for the literature review.

The fourth search term yielded 3 results from PsychInfo, 2 results from Pubmed, 6 results from Proquest Dissertations and Theses, and 598 results from Google Scholar. All of the results had previously been found or were not relevant, with the exception of two of the results from Google Scholar were new and included in the literature review. One of the new results was a literature review on Somatic Experiencing therapy upon which TRM/CRM was based. The literature review included 10 new results.

In total, the search yielded 27 results that were included in the systematic literature review. Findings from the systematic literature review will be summarized and discussed below.

## Literature Review

**Somatic interventions for trauma.** Trauma impacts virtually all body systems and increases the risk of psychological and physiological illnesses (Grabbe & Miller, 2018; Leitch et al.,). There is substantial evidence that in addition to psychological trauma, survivors of trauma also suffer significant physiological or somatic symptoms (Leitch et al., 2009). In fact, research indicates around 70% of people suffering from PTSD report somatic symptoms (Berst, 2016). To address somatic symptoms, current neuroscience supports somatic models of treatment for trauma (Grabbe & Miller-Karas, 2015). Somatic interventions prioritize ameliorating the effects of trauma on the body—such as dysregulation in the autonomic nervous system (ANS)—rather than focusing on neocortical cognition (Leitch et al., 2009). While somatic models also address cognitions and emotions, they are not the primary focus. Research indicates that interventions

for trauma that focus on cognitions and emotions may be more effective when complimented by somatic interventions. This is because areas of the brain necessary for cortical functions like verbal ability and introspection are not at their best when an individual is distressed or has just been through a traumatic event (Leitch et al., 2009; Miller-Karas, 2015).

As a result of new neuroscientific findings, many psychotherapies for the treatment of trauma have been modified by becoming “trauma-informed” or “mindfulness-based” (Grabbe & Miller-Karas, 2015). Simultaneously, new body-based, somatic therapy approaches are being developed, including Peter Levine’s Somatic Experiencing Therapy and its offshoot: The Trauma Resiliency Model/Community Resiliency Model (TRM/CRM). Elaine-Miller Karas, one of the creators of TRM/CRM observed that many of the patients she was working with at inner-city clinics— who were dealing with “the worst kinds of trauma” from poverty, violence, and racism— were not being connected to mental health services (Miller-Karas, 2015). This was not due to lack of resources, but because neither their health providers nor the patients themselves had made the connection between the physical symptoms they were experiencing and the trauma they had been through. Somatic interventions that include psychoeducation about how trauma affects the body can begin to bridge that gap.

**Somatic Experiencing Therapy.** Somatic Experiencing (SE) Therapy is a bottom-up intervention developed by Peter Levine that directs client attention to internal physical sensations (Payne et al., 2015a). SE avoids evoking direct or intense trauma memories. Instead, it approaches trauma indirectly and gradually while facilitating new corrective physiological experiences. The foundation of SE started with mathematical catastrophe theory, which posited that when a stressful event occurs, there are basic automatic physiological responses that take place in the autonomic nervous system (Berst, 2016). If the defensive response is thwarted, the energy associated with the defensive response remains trapped in the body, resulting in the symptomatology of PTSD. Nineteen years later, Stephen Porge’s

Polyvagal theory complimented Levine's theory by elaborating on how the autonomic nervous system functions and how physical symptoms associated with nervous system can develop in response to trauma (Berst, 2016)

**Origins of TRM/CRM.** In 2004, Elaine Miller-Karas, LCSW and Geneie Everette, PhD created Trauma First Aide (TFA), the first brief early biological model of intervention for trauma (Miller-Karas, 2015). Both were trained in Peter Levine's Somatic Experiencing Model. In December 2006, Laurie Leitch, PhD and Miller-Karas started working together and co-founded the Trauma Resource Institute (TRI)—a non-profit organization dedicated to bringing culturally sensitive interventions to underserved communities worldwide. Everette left to develop Trauma First Aide Associates in 2007. Leitch and Miller-Karas changed the name of Trauma First Aide to Trauma Resiliency Model (TRM) to indicate the model was not only for acute "shock" trauma but developmental trauma as well. Leitch resigned from TRI in 2012 to pursue a separate endeavor and Miller-Karas became the executive director of TRI.

The Trauma Resiliency Model is designed to help clients reprocess traumatic experiences (Miller-Karas, 2015). TRM practitioners help individuals understand the biology of traumatic stress reactions and use 9 skills that can be simply learned and taught to "reset" the nervous system, bringing it back into balance. TRM skills utilize the human body's natural ability to self-regulate with biological stabilizing skills, including tracking internal sensations to distinguish between those of well-being and those of distress (Miller-Karas, 2015; Grabbe & Miller, 2018).

The Community Resiliency Model (CRM) was created from the first 6 of the 9 TRM skills (Miller-Karas, 2015). CRM is a stand-alone set of skills available to the general population through a free app "ichill" or at www.ichillapp.com (Grabbe & Miller-Karas, 2018). The skills are intended to help people recognize signs of dysregulation in their nervous system and correct the imbalance on their own (Miller-Karas, 2015; Dust, 2018). CRM was developed as an

independent model from TRM to create a model of self-care that was accessible and affordable for adults and children from diverse educational, cultural, and ethnic communities. (Grabbe & Miller-Karas, 2018). TRM includes CRM but is expanded to include 3 extra skill for trauma-processing intended to be used by mental health professionals: titration, pendulation, and completion of the survival response. These are adapted from Levine's Somatic Experiencing psychotherapy model and require therapeutic training because of the potential to cause dysregulation.

In addition to neuroscience and SE, TRM and CRM are based upon the laws of nature, Lamaze Childbirth, Gendlin's "felt sense", Ayre's Sensory Integration Theory, Solution-Focused Psychotherapy (SFP), and Resiliency-Informed Interventions (Miller-Karas, 2015). In nature, there are rhythms that ebb and flow, like waves. In the same way, nervous system energy in our body ebbs and flows throughout the day to maintain balance. Miller-Karas has a background as a Lamaze teacher from which she learned the importance of "being with" the client and guiding them to pay attention to the "natural rhythms of healing" (Miller-Karas, 2015). Gendlin's "felt sense" comes from "holding a kind of open, non-judgmental attention to an internal knowing which is directly experienced but is not yet in words." The felt sense is a "portal of information." New meanings, beliefs, and feelings emerge spontaneously for clients as they pay attention. TRM/CRM clinicians do not have to interpret and in fact, avoid doing so (Miller-Karas, 2015). Ayre's Sensory Integration Theory is that individuals learn better when they are grounded and feel safe in their bodies, which is what TRM/CRM skills aim to achieve. The Foundational Concept of Solution-Focused Psychotherapy (SFP) is that clients know the best solution for their own life challenges. Similarly in TRM/CRM, clinicians do not interpret or confront. Instead, they adopt a non-directive stance of "not knowing" which encourages the clients to be curious about their own experience.

Both SFP and TRM/CRM focus on increasingly resiliency, or what is "right" in an individual's life instead of what is "wrong." Resilience is defined as "the ability to withstand

interpersonal, financial, work, or health challenges due to characteristics such as social skills, flexibility," and biological features of resilience (Miller-Karas, 2015). People who are resilient are better able to adapt to stressors of life with flexibility and maneuver in healthy ways through ups and downs. TRM/CRM are not just trauma-informed but resiliency-informed. The model focuses on the question: How do we help individuals, systems, and communities be more resilient?

**TRM/CRM goals.** TRM and CRM recognize trauma as a biological reaction resulting from extraordinary life circumstances (Miller-Karas, 2015). Because trauma responses are biological, human beings have common reactions to stress and trauma, even across ethnicities and cultures. TRM/CRM conceptualizes cognitive symptoms of trauma as being secondary to biological symptoms (Miller-Karas, 2015). Therefore, as the nervous system is reset, new meanings and beliefs may emerge spontaneously. Personal meanings about traumatic events can change in a way that creates space for more compassion for self and others.

TRM/CRM also posits that human beings are inherently resilient and that the body is "a system that is elegantly designed to return to balance." Research indicates that resiliency moderates the relationship between trauma exposure and development of trauma symptoms (Berst, 2016). Resilient people are better able to get back on their feet after a fall and "create meaning from their strengths that transform their lives and communities." Chronic stress from trauma can interfere with resilience (Grabbe & Miller-Karas, 2018), but there is hope: neuroplasticity (Miller-Karas, 2015). Neuroplasticity means that life experience changes the physical structure of the brain. After trauma, neural pathways associated with the traumatic event such as avoidance behaviors and triggers can become "well-worn" in the brain, but wellness skills can strengthen healthier responses. When we pay attention to well-being, it grows just as flowers grow when you water them. You can choose to water the flowers instead of the weeds. Even if weeds remain, you can pay attention to the rest of the garden. In this way, unhealthy pathways developed after trauma are weakened until they become "obsolete."

The “cornerstone concept” of TRM/CRM is the Resilient Zone (RZ), which represents the “natural rhythm or balanced flow of energy and human vitality where there is the greatest capacity for balanced thinking and feeling, being our best selves, and functioning well” (Grabbe & Miller-Karas, 2018; Miller-Karas, 2015). The brain functions better in the Resilient Zone (Miller-Karas, 2015). Some individuals, because of temperament or life challenges, may have a naturally narrow RZ while others may have a naturally wide RZ (Miller-Karas, 2015). We all have narrowed RZs and are more likely to be “bumped out” of the RZ when we are hungry, angry, tired, bored, lonely, or in pain. Sometimes individuals need extra help in getting back to the RZ. This is especially true after trauma.

Outside of the RZ on either side exist the high zone and the low zone (Miller-Karas, 2015). The high zone is sympathetic nervous system hyperarousal. When in this zone, individuals may feel edgy and irritable. They may be angry, panicked, anxious, and in pain. They may be hypervigilant to the threat of danger. The opposite is the low zone, which is parasympathetic hyperarousal. When in the low zone, individuals may feel numb, disconnected from others or self, sad, depressed, exhausted, and tired. After trauma, individuals may oscillate between the high zone and the low zone. They may even feel stuck on both at once, like pressing on the gas pedal and the brake at the same time.

The concept of the resilient zone offers an explanatory model for trauma symptoms from a biological perspective, which offers hope that clients can widen their RZ or return to it when they sense they are outside their RZ (Grabbe & Miller-Karas, 2018). It is similar to Daniel Siegal’s “window of tolerance”: an area of optimal arousal in which human beings are better able to function (Grabbe & Miller-Karas, 2018; Miller-Karas, 2015). It is also similar to HeartMath’s “personal coherence”: a state of “optimal clarity, perception, and performance when physical, mental, and emotional symptoms are synchronized (Miller-Karas, 2015). The goal of TRM/CRM is to help people become more aware of the RZ by learning to track sensations

connected to it and distinguish between sensations of distress and well-being. This can help individuals return to their RZ when they are bumped out.

Another goal of TRM/CRM is cross-cultural adaptability (Miller-Karas, 2015). The “simple but powerful” wellness skills of TRM and CRM are accessible and have demonstrated efficacy across borders, cultures, belief systems, ethnicities, and developmental ages. The TRM/CRM model is taught in many countries and languages. Even though biological reactions to trauma are considered universal, TRM/CRM also acknowledges that learning about a person’s culture is critical when teaching the wellness skills. Cultural beliefs and experiences shape how people within a community interpret trauma. Trauma interventions are better received and more effective if they are communicated in a way that is considerate and respectful of deeply-held cultural beliefs. As an example, there is a great deal of research supporting mindfulness as an effective treatment for trauma, but mindfulness may not be well-received by certain communities because of the perceived connection to Buddhism.

Miller-Karas defines cultural sensitivity as “the ability to empathize with and understand the beliefs, customs, languages, and rituals of a particular culture” (Miller-Karas, 2015). To increase cultural sensitivity, CRM training teams are required to perform personal evaluation of their attitudes and beliefs about working with cultures that may have attitudes and beliefs different from their own. In order to create interventions that are culturally informed, CRM training teams learn about local dialects and idioms used to describe suffering. They also incorporate images of people who reflect the community in their training materials. To respect community beliefs, the biology of the human nervous system is introduced as “a co-existing concept with pre-existing cultural explanatory models.” Spirituality is not only respected but embraced by the CRM model. Miller-Karas notes that when people all over the world describe their spiritual beliefs, “there is a universal response of deep parasympathetic breath accompanied by muscle relaxation.” Spirituality can therefore be incorporated into the trauma intervention as a resource for healing.

Increased access to mental health services for underserved populations is another goal of the model and is the reason CRM was created (Miller-Karas, 2015). CRM's wellness skills can increase access to care in two ways. The first is that the wellness skills are designed to be taught quickly and easily in almost any setting. Because so many individuals experience trauma all over the world, it is difficult to train enough providers to treat them all. Treatment models such as Trauma-Focused Cognitive Behavioral Therapy (TFCBT) and Eye Movement Desensitization and Reprocessing Therapy (EMDR) are effective for treating trauma, but require a significant time commitment for practitioners to become proficient. A brief early somatic intervention like CRM can be quickly learned by providers (Miller-Karas, 2015) and can be efficiently utilized in emergency settings where clinicians may only have brief access to survivors (Leitch et al., 2009). Traumatic events can be chaotic, especially in the case of natural disasters. Survivors are often not connected to long-term mental health services, so teaching the skills before discharge from the hospital can increase the likelihood that survivors receive care.

The second way CRM improves access is by disseminating wellness skills among populations that otherwise may not be connected to services due to lack of resources and community attitudes about mental health (Miller-Karas, 2015). Mental health services are often inadequate for underserved populations and when they exist, they are often provided in larger group settings, since individual therapy may be either too expensive or culturally inappropriate (Miller-Karas, 2015). Individuals in rural communities may have limited access to services due to lack of availability, while inner city clinics ore often over-crowded and under-funded. Some populations, like veterans, may not be psychologically-oriented and prefer to seek a member of their social network for help rather than a therapist (Miller-Karas, 2015). Community members (such as clergy) and professionals (such as doctors and nurses) can be trained to teach the CRM wellness skills to provide resiliency training to more people in the community (Miller-Karas, 2015). The skills can be used by individuals for their own self-care and self-regulation and taught to family members and friends so they can do the same (Miller-Karas, 2015).

**Mechanism of change.** The mechanism of change for somatic interventions is different than that of exposure therapies (Payne et al., 2015a). Little research has been done about the mechanism of change for TRM/CRM (Dust, 2018), but it is hypothesized to be similar to the mechanism of change for mindfulness or meditation (Dust, 2018). Mindfulness and TRM/CRM share some commonalities (Dust, 2018) as do Mindfulness and SE (Brom et al, 2017; Payne et al., 2015a), upon which TRM/CRM was based (Miller-Karas, 2015). TRM/CRM is like a bottom-up form of meditation because "sensations are the language of the survival brain" (Dust, 2018). Both TRM/CRM and mindfulness train present-moment attention and awareness; however, they differ in that mindfulness is concerned with focusing on mental processes whereas CRM is concerned with focusing on physiological states. TRM/CRM cultivates present-moment attention and awareness through the skills of grounding and tracking, and the resource skill is similar to a loving-kindness or compassion meditation, although there are no mantras.

Mindfulness meditation practices have been shown to improve insular functioning (Payne et al., 2015a). The insula is part of the cerebral cortex that lies in the fissure between the frontoparietal lobes and the temporal lobes (Grabbe & Miller-Karas, 2015). It is in front of the pons and surrounded by the limbic system and cortical executive control centers. Insular functioning is associated with interoception, the conscious awareness of the body's internal state known as the "felt sense" (Payne et al., 2015a). Interoception may play a role in emotion regulation and resilience and could help prevent sequelae of trauma (Grabbe & Miller-Karas, 2015). Using interoception to focus on positive emotions and sensations can create positive neural imprints, pathways, or templates. This is consistent with Hebb's assertion in 1945: "neurons that fire together wire together." Learning intentional awareness of internal sensations as is done in TRM/CRM can lead to enhanced self-regulation and access to positive internal resources, which in turn leads to improved interpersonal functioning, improved control of emotions, and healing from trauma. Levine agreed that "gentle encouragement" of attention to

affective and interoceptive experience may shift the cortex from dorso-medially to ventro-medially controlled cortical networks, thereby facilitating self-regulation (Payne et al., 2015a).

**TRM/CRM skills.** The Trauma Resiliency Model consists of 9 skills based upon current neuroscience that return the nervous system to balance (Miller-Karas, 2015). The first 6 of the 9 skills are wellness skills which can be taught by non-mental health professionals to members of their communities to increase community resilience. They can also be used by individuals for self-care and self-regulation. Once someone has the tools, they can regulate their own nervous system during times of distress. These 6 skills are known as the Community Resiliency Model (CRM). The remaining 3 skills are intended to be used by trained mental health professionals to help clients reprocess trauma (Miller-Karas, 2015). The skills can be used in any order or independently and in group or in individual sessions (Grabbe & Miller-Karas, 2018).

The first skill is Tracking: paying attention to sensations within the body (Miller-Karas, 2015). It is helpful to learn the language of sensation because that's how we "talk" to the nervous system (Trauma Resource Institute, 2020). Tracking helps individuals learn how to bring balance back to the nervous system. At first, individuals may only be aware of uncomfortable sensations, but there are usually places in the body that are not in distress or are in less distress. There may even be places that feel good. To get back into the RZ, it is necessary to pay attention to places of comfort in the body. This will help individuals put the brake on if the accelerator is stuck on high. Paying attention means noticing the internal sensations while focusing on areas in the body that are less distressed, neutral, or positive. When individuals have been bumped out of the RZ, the body can feel like the enemy. Tracking inner sensations, even ones that are comfortable, can be difficult at first, but as individuals get more experience in tracking, finding inner sensations of comfort will get easier and easier.

The second skill is resourcing/resource intensification (Miller-Karas, 2015). Resources are anything that increases an individual's sense of internal resiliency and self-efficacy and are

associated with positive internal sensations (Trauma Resource Institute, 2020). This can help stabilize the nervous system and bring the individual back to the RZ. Resource intensification is a process of enhancing the description of the resource, which helps strengthen the resource and pleasant/neutral sensations associated with it. There are 3 types of resources. The first type is external resources such as people, places, spiritual beliefs, skills, hobbies, and pets. The second type is internal resources such as values and beliefs, positive character traits, body strengths, positive memories. The third type is imagined resources, which involves imagining a resource and what life would be like if the resource existed. These can include imaginary places, fictional characters, or even imagined superpowers and can be helpful in cases when individuals are not able to identify external/internal resources. It is better for clients to discover their own resources rather than have the therapists suggest resources for them, as clients are experts on their own lives and are likely to think or resources that are more personally relevant to them (Heller & Heller, 2004).

While teaching resourcing/resource intensification to clients, practitioners should be aware of the negativity bias (Miller-Karas, 2015). Negative sensations like pain, fatigue, and hunger are more likely to be noticed and attended to than neutral or pleasant body sensations (Grabbe & Miller-Karas, 2015). Additionally, highly-charged negative experiences are stored more quickly in memory as 2/3rds of the amygdala's neurons search for "bad news." Positive experiences need to be held in awareness for longer to facilitate their transfer from short-term to long-term memory. Therefore, clients need to focus on resources longer and in greater detail to override the negativity bias. Practitioners should also be aware of the "dual nature" of some resources. Clients may become emotional when discussing a resource associated with sadness or pain (i.e. discussing a grandmother who has passed away). If this happens, practitioners can be present with the client's experience and then ask them to share positive things about the resource ("What are some good times you had with your grandmother?"). However, if the client

is unable to shift to positive or neutral aspects of the resource, the practitioner may need to ask them to think of another resource.

Practitioners can use CRM's survival resource questions to identify resources related to the traumatic event (Miller-Karas, 2015; Leitch, n.d.). Survival resource questions can help remind clients that the event is over and that they survived, which shifts focus from trauma to resiliency and internal strength (Miller-Karas, 2015; Heller & Heller, 2004). When people have been traumatized, they experience the trauma as if it is still happening and certain to happen again. The survival questions establish that there is an "after" and can help clients perceive the body's capacity to switch to relaxation responses (Heller & Heller, 2004). The following are examples of survival resource questions: (1) Can you remember the moment when you knew you were going to survive? (2) Can you remember the moment when help arrived? (3) Who else made it through? (4) What gives you the strength to get through this now? (5) When you have experienced other difficult times in your life, what helped you get through? (6) Who is helping you the most now? (Miller-Karas, 2015).

The third skill is Grounding (Miller-Karas, 2015). When an individual has been through trauma, triggers can make them feel like they are in the past, when the trauma was still happening. Grounding helps bring the body into the here-and-now by noticing how the body or a part of the body is making contact with a surface. This helps remind the body that it is safe. Individuals can ground sitting down, lying down, or standing. Individuals can also bring awareness to hands/feet by making contact with a surface. Grounding can even be done floating in the ocean. Grounding should not be introduced until after the client has learned tracking and resourcing. Tracking should be used to focus on pleasant/neutral body sensations associated with grounding, and resourcing can be used for clients who do not respond well to grounding. If sensations of breath or heart rate are associated with trauma, drawing attention to the body in the present moment can trigger a flashback, in which case it may be necessary to discontinue grounding and switch to resourcing. Grounding is helpful for individuals who

dissociate, although some may need a physical sense of weight on their body. Practitioners can use weighted items like a heavy pillow, bean bag, or weighted blanket. Practitioners should check in with client's comfort by asking how close they want the practitioner to be before beginning the grounding exercise. Individuals who are shorter of stature may be accustomed to their feet not touching the ground. Practitioners can provide pillows, books, or a platform so they can sense their feet against a solid surface.

The fourth skill is gesturing (Miller-Karas, 2015). Gestures are defined by Merriam-Webster as "movement usually of the body or limbs that expresses or emphasizes an idea, sentiment, or attitude and the use of motions of the limbs or body as expression" (Miller-Karas, 2015, p. 45). Gestures are inherently self-soothing and can be part of an individual's repertoire for self-regulation. There are four types of gestures: self-calming (brings comfort and safety), gestures of release (represent body coming back into balance and sensation of something distressing leaving the body), universal movements (represent wholeness, spiritual beliefs, or deep personal meaning), and protective movements (hand, leg, and whole body). Gestures may emerge spontaneously, but practitioners can also help clients identify gestures that are self-soothing to bring awareness to the present moment and return nervous system back to the RZ. Asking clients to slow down the gesture can deepen the embodied sense of the gesture, thus increasing positive/neutral sensations associated with it. Clients should be encouraged to use the tracking skill to track positive/neutral sensations associated with gestures. Bringing attention to gestures may feel intrusive for some clients. Practitioners can explain why they are bringing attention to gestures by saying:

> This model helps bring into awareness comforting or self-soothing gestures that are often just under conscious awareness. With your permission, from time to time, I will draw your attention to gestures you make to help you learn about the gestures that may help you more easily return to your RZ (Miller-Karas, 2015, p. 45).

Help Now! is the fifth skill (Miller-Karas, 2015). This skill includes specific strategies to bring down activation in the nervous system when an individual is stuck in high or low zone. Help Now! strategies are intended to help the individual focus on something else besides distress and sensations of being overwhelmed. The ten Help Now! strategies are: (1) Drink a glass of water, a cup of tea, or cup of juice. (2) Look around the room or wherever you are, paying attention to anything that catches your attention. (3) Name 6 colors you see in the room (or outside) (4) Open your eyes if they have a tendency to shut. (5) Count backwards from 10 as you walk around the room. (6) If you're inside, notice the furniture, and touch the surface of a couch or chair, noticing if it's hard, soft, or rough. (7) Notice the temperature in the room. 8) Notice the sounds within and outside the room. (9) Walk and pay attention to the movements in your arms and legs and how your feet are making contact with the ground. (10) Push your hands against the wall or door slowly and notice your muscles pushing.

Practitioners can teach clients the Help Now! strategies and encourage them to use them when needed (Miller-Karas, 2015). Not all of the strategies work for everyone, so clients should be encouraged to experiment and discover which ones work best for them. Help Now! strategies can be shared with a client's social support network so that they can help the client get back to RZ or use them for their own self-regulation. Help Now! strategies can also be used when the client cannot or does not want to talk. It is important for practitioners not to push talking. Instead, they can invite the client to bring awareness to the present moment by suggesting the strategies as options, which can be empowering at times when clients feel like all of their choices have been taken away. Examples of how to suggest the strategies in a conversational way are as follows: (1) Would it be helpful to go for a walk together? (2) Sometimes it helps to get the energy of anxiousness out by pushing against the wall with our hands or pushing our backs against the wall. Do you want to do it with me? (3) Can I get you a drink of water? (4) Sometimes it can help to look around the room and see what catches your attention? Is there a color you like for example? (5) When I am not feeling like my best self, I

have found it helpful to remember a time in my life that was better than this moment. (6) If I am really anxious, sometimes it helps me to count down from 20. Would you like to try it with me? (7) I found this app called iChill and I listen to it when I am down or too anxious. You might want to think about using it when you are stressed or down.

The sixth and final wellness skill of the CRM model is Shift and Stay (Miller-Karas, 2015). Shift and Stay means shifting attention from something unpleasant or distressing that can include thoughts, feelings, or sensations to a place in the body that is neutral or pleasant and staying with those sensations (Trauma Resource Institute, 2020.). When bumped out of the resilient zone, clients can shift their attention to a place inside that feels calmer or more neutral. They can also shift attention to a resource, grounding to bring your attention to the present moment, or a gesture that is self-soothing. Then, they can stay with those sensations until they feel more stable.

The next three skills are from TRM (Miller-Karas, 2015). They are based upon SE and are intended to be used by trained mental health professionals for trauma re-processing with their clients. They should not be used by a layperson due to the potential for dysregulation when reprocessing trauma. The first of these skills is Titration. While the clinician is helping a client become aware of sensations connected to trauma, they may become overwhelmed. As client describes the sensations, they are invited to describe sensations in more concrete way and guided to focus on a smaller, more manageable piece of the sensation. Processing somatic activation from trauma in bite-sized pieces helps clients manage sensations without becoming overwhelmed by them. The second of these skills is Pendulation, which involves shifting back and forth between sensations of distress and sensations of well-being within the nervous system. Pendulation is similar to Ogden's oscillation, which involves oscillating back and forth to help clients shift focus from trauma activation to more resourced or present-moment experience. Titration and Pendulation are often used together.

The third TRM-specific skill is Completion of Survival Responses. When human beings are threatened there are four survival strategies: fight, flight, freeze, and tend and befriend (Miller-Karas, 2015). When someone cannot fight or run away, the freeze response is used. Think of a possum playing dead for protection from a predator. Another nervous system response is tend & befriend. T&B refers to protection of offspring (tending) and seeking out the social group for mutual defense (befriending).

Triggers remind the nervous system of the trauma, thus triggering one of the four survival strategies. Giving clients psychoeducation about the biology of triggers can reduce shame and self-blame, especially for clients that experience them frequently. According to Peter Levine, when someone is threatened, massive amounts of energy are mobilized within the body for self-defense. If they can complete the defensive response, there is a natural discharge of energy. Discharge sensations, which can include movements such as shaking, trembling, and deep spontaneous breaths, reset the autonomic nervous system and restores balance. Unfortunately, we often unknowingly interfere with this process when we put a brake on experiencing these sensations for various reasons. As a result, energy meant for defensive responses can become stuck in the body, resulting in physical, behavioral, cognitive, and psychological symptoms. The goal of TRM's Completion of Survival Responses is to release blocked energy, thereby alleviating symptoms.

**Summary of Literature**

**Efficacy for trauma interventions.** TRM and CRM have demonstrated effectiveness in the treatment of many kinds of trauma (Berst, 2016), as has SE (Leitch et al., 2009). Below is a summary of some of the existing literature on the topic:

- Leitch, M. L., Vanslyke, J., & Allen, M. (2009). Somatic experiencing treatment with social service workers following Hurricanes Katrina and Rita. *Social Work,* 54 (1), 9-18.

This exploratory study was with a nonrandom sample of 142 social service workers who were survivors of Hurricanes Katrina and Rita in New Orleans and Baton Rouge, two to three months after the disasters. The treatment group showed statistically significant gains in resiliency indicators and decreases in posttraumatic stress disorder symptoms. Although psychological symptoms increased in both groups at the three to four-month follow-up, the treatment group's psychological symptoms were statistically lower than comparison group (Leitch et al., 2009).

- Parker, C., Doctor, R. M., & Selvam, R. (2008). Somatic therapy treatment effects with tsunami survivors. *Traumatology,* 14(3), 103-109.

  This is an uncontrolled field study of the outcome effects of somatically based therapy with tsunami victims in southern India. One 75-minute session with a four-stage protocol was conducted in community settings. At 8-month follow up, 90% of participants reported significant improvement or being completely free of symptoms of intrusion, arousal, and avoidance (Parker, Doctor & Selvam, 2008).

- Brom, D., Stokar, Y., Lawi, C., Nuriel-Porat, V., Ziv, Y., Lerner, K., & Ross, G. (2017). Somatic experiencing for posttraumatic stress disorder: a randomized controlled outcome study. *Journal of traumatic stress,* 30(3), 304-312.

  This was the first known randomized controlled study evaluating the effectiveness of somatic experiencing SE, an integrated body-focused therapy for treating people with posttraumatic stress disorder PTSD. 63 participants meeting DSM IV criteria for PTSD were included. The study was conducted in Israel in an outpatient setting. Mixed model linear regression analysis showed significant intervention effects for posttraumatic symptoms severity and depression (Brom et al, 2017).

- Payne, P., Levine, P. A., & Crane-Godreau, M. A. (2015a). Somatic experiencing: using interoception and proprioception as core elements of trauma therapy. *Frontiers in psychology*, 6, 93.

  This is a composite case study of Somatic Experiencing treatment with possible neurophysiological rationale for mechanisms involved including theory of trauma and chronic stress as a functional dysregulation of the complex dynamical system formed by subcortical autonomic, limbic, motor, and arousal systems —core response network (Payne et al., 2015a).

- Heller, D. P., & Heller, L. (2004). Somatic experiencing in the treatment of automobile accident trauma. *US Association for Body Psycho-Therapy Journal,* 3 (2), 42-52.

  This article on the role of the body in auto accident recovery uses a clinical example to describe basic elements of SE (Heller & Heller, 2004).

- Berst, M. L. (2016). *Treating Trauma in Burn Victims Using the Community Resiliency Model: A Quasi-experimental Study* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (10092246)

  The focus of this quasi-experimental study was to determine the extent to which participants with symptoms of PTSD who received CRM training and participants with symptoms of PTSD who did not receive CRM training, but were waitlisted to do so, differed with respect to the combined frequency and severity rating score on the three PTSD clusters resulting from burn trauma: intrusive thoughts and behaviors, avoidance/numbing, and hyperarousal. Results showed a statistically significant difference between groups at pre-test for intrusive thoughts and behaviors and for avoidance/numbing but not for hyperarousal (Berst, 2016).

- Schauer, M. (2017). *A interpretive phenomenological study of the clinical application of the Trauma Resiliency Model to couples with one partner with PTSD symptoms* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (1993380490)

  This qualitative study assessed the effectiveness of the Trauma Resiliency Model in couples work when one couple met diagnostic criteria for PTSD. The TRM intervention was conducted by the primary researcher, a doctoral level student trained in TRM level 1 and 2. All eight participants that made up the four couples reported the application of the TRM in couple therapy was beneficial to them both individually and as a couple. 6 themes emerged: (a) intimacy with their partner leading to increased communication, (b) vulnerability with their partner, (c) increased differentiation of self by the partner with more severe symptoms of PTSD, (d) co-regulation, (e) an experience of empathy for their partner, and (f) an experience of release of tension (Schauer, 2017).

**Efficacy for treatment of other conditions.** SE may also be effective in treating conditions related to trauma such as chronic pain.

- Ellegaard, H., & Pedersen, B. D. (2012). Stress is dominant in patients with depression and chronic low back pain. A qualitative study of psychotherapeutic interventions for patients with non-specific low back pain of 3–12 months' duration. *BMC musculoskeletal disorders*, 13(1), 166.

  This qualitative study explored the effectiveness of combining Gestalt therapy and Somatic Experiencing therapy to treat non-specific chronic low back pain. The authors concluded that the treatment reduced level and stress and increased the ability to cope with low back pain. (Eleegard & Pederson, 2012).

**Efficacy for skills training interventions.** Training individuals in CRM skills can increase resilience in communities (Baptiste, 2010; Miller-Karas & Leitch, 2009; Miller-Karas & Citron, 2013a; Miller-Karas & Citron, 2013b; Ruffalo, 2012). In addition to reaching skills to community, skills can be used by the trainers for their own self-care and to reduce effects of vicarious traumatization (Leitch, N.D.) Below are summaries of publications about the Trauma Resource Institute's Train-the-Trainer programs.

- Baptiste, A. J. (2010). Haiti Earthquake Relief Project's Training Evaluation Report. Article retrieved from: https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59ab513dd55b41cd8b09403f/1504399678256/HAITI-TRI_evaluation_summary_ajb.pdf
  The Haiti earthquake relief project is a training project currently in its final implementation phase. CRM skills training was led by the Trauma Resource Institute (TRI). 100% of survey respondents found Haiti earthquake relief project's training useful. They found the methods simple and quick. They relate that with this training, they became more skilled and gained tools and knowledge related to trauma to help their family, colleagues, villages, and friends get back to normal and help people regain consciousness. They feel prepared and have a new approach and new elements to share (Baptiste, 2010).

- Miller-Karas, E., & Leitch, L. (2009). A case for using biologically-based mental health intervention in post-earthquake China: evaluation of training in the trauma resiliency model. *Emergency Mental Health*, 11(4), 221-233.
  Trauma Resiliency Model skills were provided as part of China Earthquake Relief Project (CHERP) to a non-random sample of 367 caregivers and first responders during 18-month period after earthquake. Trainings were provided in six cities with goal of bringing biologically-based trauma intervention training and treatment to local areas and equip local responders

with stabilization skills. Interventions were provided in hospitals, hospital tents, or other medical facilities in resettlement camps, work site, or whatever space was least damaged. Results indicate 98% of respondents reported being moderately to very satisfied with TRM training for self-care and for use with survivors (Miller-Karas & Leitch, 2009).

- Miller-Karas, E. & Citron, S. (2013a). Community Resiliency Model Evaluation, California Mental Health Services Act. Retrieved from: https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59ab4d22579fb343a2ce7a68/1504398627341/Attachment-1-CRM-Evaluation-Report-Includes-Holistic-Group-09.05.13-FINAL-VERSION-51.pdf

  The Department of Behavioral Health (DBH) in San Bernardino County's Community Resiliency Training (CRM) Innovation Project was initiated in December 2010 through the CA Mental Health Services Act-Proposition 63. Implemented by DBH and the Trauma Resource Institute (TRI), the goal was to bring biologically based trauma intervention training (CRM) to 7 marginalized groups in San Bernardino County who have limited financial and logistical access to mental health resources. The intent was to expand local response capacity by offering training in CRM skills. Results of training evaluations received from approximately 68 trainees immediately after their last training session indicate that 96% of respondents believe the CRM skill training will be very to moderately relevant or useful for their work with people in the community (Miller-Karas & Citron, 2013a).

- Miller-Karas, E. & Citron, S. (2013b). Community Resiliency Model Evaluation, Veteran Extension Project, California Mental Health Services Act. Retrieved from: https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59ab4e1fe5dd5b69d4098633/1504398880644/CRM+VEP-Evaluation-Report-03.11.13-v21.pdf

  The Department of Behavioral Health (DBH) in San Bernardino County's Veteran Extension

Project (VEP) was initiated in February 2012 in response to the request of the Department of Behavioral Health to extend community resiliency services initiated in the CRM project in 2010 to larger veteran population in San Bernardino County. The goal was to bring biologically based trauma intervention to a larger cohort of veterans in San Bernardino County who have limited financial and logistical access to mental health services and expand local response capacity by offering training in CRM skills. 100% of the trainers reported being satisfied with the training (Miller-Karas & Citron, 2013b).

- Ruffalo, M. (2012). Trauma Resiliency Model (TRM) Analysis: Trauma Resiliency Model (TRM) Survey Results; conducted by the County of San Bernardino Department of Behavioral health. Retrieved from: https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59af36a7cd39c3ef80fea316/1504655016549/TRM-survey-2012-from-DBH.pdf

  San Bernardino County Department of Behavioral Health invested in a train-the-trainer program and now have their own Trauma Resiliency Model trainers. Over 400 of their staff (case managers, social workers, counselors, psychologists, psychiatrists) have been trained. A survey was conducted by training center of DBH to determine staff's perceptions of usefulness and effectiveness of trauma resiliency model. 91% said they found it useful (Ruffalo, 2012).

**Literature reviews and other Publications about SE/TRM/CRM.** Below are summaries of literature reviews and other publications about SE/TRM/CRM:

- Miller-Karas, E. (2015). *Building resilience to trauma: The trauma and community resiliency models.* Routledge.

  A book written by one of the co-founders of the Trauma and Community Resiliency Models. It

includes discussion of TRM/CRM skills and review of literature on TRM/CRM (Miller-Karas, 2015).

- Grabbe, L., & Miller-Karas, E. (2018). The trauma resiliency model: a “bottom-up” intervention for trauma psychotherapy. *Journal of the American Psychiatric Nurses Association,* 24(1), 76-84.

  This article presents the Trauma Resiliency Model and current literature on neuroscience of trauma and resiliency, rationales for body-based therapy. It also presents two case studies on the use of TRM with clients (Grabbe & Miller-Karas, 2018).

- Payne, P., Levine, P. A., & Crane-Godreau, M. A. (2015b). Corrigendum: Somatic Experiencing: using interoception and proprioception as core elements of trauma therapy. *Frontiers in psychology*, 6, 423.

  This addendum to Payne, Levine, and Crane-Godreau’s previously published case study on Somatic Experiencing Therapy (2015a) summarizes peer-reviewed literature on the effectiveness of SE. The authors conclude the literature offers evidence supporting continued research into SE. The literature on SE for disaster response indicate strong support for the efficacy of SE as an early, low-dose, culturally flexible intervention for victims and providers in the context of natural disasters (Payne, Levine & Crane-Godreau, 2015b).

- Levine, P. A. (2003). Panic, biology and reason: giving the body its due. *US Assoc. Body Psychother. J.* 2, 5–21.

  This publication discusses the role of bodily responses and sensations in anxiety and trauma. It offers case studies to illustrate Somatic Experiencing principles. It also discusses examples of similar biological response to stress/trauma in the animal kingdom (Levine, 2003).

**SE/TRM/CRM as preventative intervention.** Below are summaries from literature on the use of TRM/CRM and related skills as a preventative intervention:

- Dust, M. (2018). *Evidence-Based Trauma Prevention: Testing the Community Resiliency Model* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (10829562.)

  The experimental studies presented in this dissertation were designed to investigate the physiological underpinnings of the Community Resiliency Model and test it on three potential intervention targets for the prevention of PTSD. The results were inconclusive but did not indicate any significant differences between groups (Dust, 2018).

- Stanley, E. A., Schaldach, J. M., Kiyonaga, A., and Jha, A. P. (2011). Mindfulness- based mind fitness training: a case study of a high-stress predeployment military cohort. *Cognitive Behavioral Practice 18*, 566–576. doi: 10.1016/j.cbpra.2010.08.002

  See also: Stanley, E. A. (2014). Mindfulness-Based Mind Fitness Training: An Approach for Enhancing Performance and Building Resilience in High-Stress Contexts. *The Wiley Blackwell handbook of mindfulness*, 964-985.

  This non-clinical feasibility study examined the use of Mindfulness Training (MT), which incorporates elements of Somatic Experiencing therapy, with US Marine reservists. The intervention was administered pre-deployment. Qualitative results indicate perceived benefits and areas for improvement (Stanley, Schaldach, Kiyonaga, & Jha, 2011; Stanley, 2014).

**Other relevant literature.** Below are summaries from other noteworthy literature found during the systematic literature review on TRM/CRM:

- Hricko, A. C. (2011). Whole brain integration in the clinical application of Somatic Experiencing. *US Assoc. Body Psychother. J.* 10, 24–28.
  This article makes a case for the importance of “right brain literacy” in SE trauma therapy (Hricko, 2011).

- Ruden, R. A. (2008). Encoding states: a model for the origin and treat- ment of complex psychogenic pain. *Traumatology* 14, 119–126. doi: 10.1177/1534765608315625
  The author discusses hypotheses compatible with SE theory about the neurological mechanisms behind the role of trauma in complex pain (Ruden, 2008).

- Leitch, L (n.d.). Information gathering after trauma: Considerations for human rights work, peacebuilding, and interviews about traumatic events.
  This article discussing considerations for gathering information after trauma. Trauma Resiliency Model skills of titration and resourcing used in interviewing can reduce re-traumatization and vicarious trauma. These skills titrate traumatic aspects of story and emphasize the survival or mastery parts of the story. The article recommends using resourcing questions such as: “Tell me about the moment when you knew you had survived” to increase resiliency (Leitch, n.d.)

- Van der Kolk, B. A. (2006). Clinical implications of neuroscience research in PTSD. New York.
  This article reviewed aspects of neuroscience supportive of the Somatic Experiencing therapy approach. The author emphasized evidence supporting the usefulness of attending to interception and proprioception (Van der Kolk, 2006).

- Whitehouse, B., & Heller, D. P. (2008). Heart Rate in Trauma: Patterns Found in Somatic Experiencing and Trauma Resolution. *Biofeedback,* 36(1).

  The authors discuss the use of physiological monitoring, especially heart rate variability, spectral analysis, and capnometry in measuring client psychophysiological states during Somatic Experiencing trauma resolution therapy. Somatic Experiencing constructs arc described in the article. Authors discuss client reports that seeing physiological data made the changes they felt “even more real or powerful” (Whitehouse & Heller, 2008).

**Answers to Research Questions**

Results from the literature review were used to respond to the following research questions.

- Research Question 1: What are the components of a successful somatic intervention for the treatment of PTSD?

The literature review suggested that the following components are associated with a successful somatic intervention for treating PTSD: psychoeducation, tracking sensations of well-being, and continued practice of the skills. Miller-Karas has observed that it makes a difference when individuals are able to understand their symptoms from a biological perspective (Miller-Karas, 2015). Peter Levine also observed the usefulness of psychoeducation, as the SE process may be unlike anything else the client may have previously experienced and may seem counter-intuitive (Payne et al., 2015a). Overall, experts agree that psychoeducation to demystify trauma should be provided to clients (Miller-Karas, 2015). Miller-Karas recommends psychoeducation that includes simple explanations about how the nervous system commonly responds to threat and instills a sense of hope by focusing on resiliency as opposed to potentially negative and frightening symptoms (Miller-Karas, 2015; Grabbe & Miller-Karas,

2018). After reviewing the literature, it was determined that the resource should contain psychoeducation about trauma with simple explanations (Grabbe & Miller-Karas, 2018) about the neurobiology of trauma including the role of ANS in stress management (Dust, 2018; Miller-Karas, 2015; Grabbe & Miller-Karas, 2018). In addition, education on TRM/CRM concepts including the Resilient Zone (Dust, 2018; Grabbe & Miller, 2018; Miller-Karas, 2015) and the CRM wellness skills (Dust, 2018; Miller-Karas, 2015) will also be included.

Learning to track sensations of well-being is integral to any somatic intervention (Berst, 2016; Miller-Karas, 2015; Parker et al., 2008). Positive emotions are associated with a broadened focus of attention and decreased autonomic activity (Dust, 2018), but clients may need encouragement to focus on positive sensations due to the negativity bias, which leads to increased focus and attention on negative sensations (Miller-Karas, 2015). Learning to track sensations is an integral part of TRM/CRM (Miller-Karas, 2015) and may be related to the mechanism of change for somatic interventions (Dust, 2008; Payne et al., 2015a). Tracking sensations, as done in somatic interventions, may activate similar brain areas as meditation or mindfulness practices, which can improve insular functioning (Payne et al., 2015a). Insular functioning is associated with interoception, the conscious awareness of the body's internal state known as the felt sense (Payne et al., 2015a), which may play a role in emotion regulation and resilience and could help prevent sequelae of trauma (Grabbe & Miller-Karas, 2015).

Research also indicates that continued practice of learned skills may be important for a successful intervention (Miller-Karas, 2015; Dust, 2018). Instructions for home practice can be included in a handout for client to reference (Dust, 2018). Additionally, the iChill app and website were created to disseminate CRM's wellness skills (Miller-Karas, 2015). iChill is a free and publicly available resource that clients can reference on their own in order to continue practicing the skills. The app encourages individuals to rate where they are in relation to their Resilient Zone on a 1-10 Likert scale—with 1 being in the low zone and 10 being in the high zone—before and after using the skills. It contains descriptions in audio and visual format of

what the skills are and how to practice them. Additionally, the app encourages individuals to take pictures of their personal resources, which can be stored in the app.

Two other components— telling of the trauma narrative and completion of the survival response— were also associated with successful interventions (Berst, 2016; Brom et al, 2017; Miller-Karas, 2015). However, retelling the trauma narrative is potentially re-traumatizing and should only be attempted slowly and with the help of a trained mental health professional (Leitch, n.d.). Additionally, it may not be received well by clients who have difficulty trusting others (Brom et al, 2017; Grabbe & Miller, 2018). Completion of the Survival Response is similarly inappropriate in a brief context (Leitch, n.d.; Grabbe & Miller, 2015; Miller-Karas, 2015). Because of the brief nature of proposed intervention for SLATRC's population, neither will be included in the intervention. These components could be integrated into later treatment for clients who are connected to longer-term mental health services.

- Research Question 2: What therapeutic/client/systemic factors contribute to a somatic intervention's effectiveness in treating trauma?

A therapeutic factor associated with a somatic intervention's effectiveness is the ability to build rapport with clients (Brom et al, 2017; Payne et al., 2015a). The initial goal of a somatic practitioner is always to create a sense of safety for the client (Payne et al., 2015a). An individual's sense of safety can be severely compromised in the aftermath of a traumatic event, and feeling unsafe can impair the ability to learn (Miller-Karas, 2015). Literature indicates that the vagal system, otherwise known as the social engagement system, can be used to promote nervous system balance through social engagement (Hricko, 2011; Payne et al., 2015a). Miller-Karas recommends building rapport and creating safety by offering the client options (Miller-Karas, 2015). Instead of pushing clients into areas that feel unsafe, practitioners should always remain "a half-step behind" (Miller-Karas, 2015, p. 31) the client. The provider should use

invitational language (i.e. I invite you to close your eyes…) to allow clients to choose for themselves based on their comfort level whether they participate in an activity or not. TRM/CRM practitioners also offer clients the choice of what level of proximity is comfortable for them by asking explicit questions (i.e. How far away would you like me to be?) Traumatic events can take away an individual's ability to choose what happens to them, and respecting the client's right to choose can return a semblance of control and safety.

Client motivation is associated with a somatic intervention's effectiveness (Dust, 2018; Stanley et al., 2011; Miller-Karas & Citron, 2013a). Research indicates that clients who do not want to participate in an intervention due to lack of readiness or perceived lack of relevance for them are significantly less likely to benefit. Client motivation can be increased in two ways. The first is to consider cultural and individual factors when creating and implementing somatic interventions (Miller-Karas, 2015). The second is to provide psychoeducation on the somatic effects of trauma and how somatic interventions can reduce trauma symptoms by increasing nervous system regulation. Clients who understand the rationale behind an intervention are naturally more likely to be more motivated to participate. Additionally, psychoeducation that increases clients' understanding of how somatic symptoms can result from trauma can have a positive effect on motivation for clients who primarily experience somatic, as opposed to psychological, symptoms of trauma. Clients with primarily somatic symptoms of trauma may otherwise interpret trauma interventions as not being personally relevant for them. Another client factor that affects the efficacy of the intervention may be severity of trauma symptoms (Parker et al., 2008). Increased severity of trauma symptoms may require a higher level of intervention to significantly reduce.

More research is needed on systemic factors that contribute to a somatic intervention's effectiveness in treating trauma, but research suggests that location-specific factors such as neighborhood exposure to trauma and access to resources may affect the efficacy of interventions (Miller-Karas, 2015; Parker et al., 2008). Parker, Doctor, and Selvam (2008)

observed that one of the cities in India where they administered the somatic intervention, Cuddalore, consistently had better results than another, Nagapattinam. Although they were unable to identify specific factors associated with each city that could explain these results, they hypothesized that Nagapattinam had greater devastation, losses, and community disruption than Cuddalore and therefore may have had greater trauma and a higher ceiling for change. Another possibility is that aspects of Cuddalore's culture may have better supported a somatic treatment approach, including a higher level of education, sense of their own bodies, or willingness to practice the skills. Therefore, culture should always be considered when designing interventions and providing services to individuals and communities (Miller-Karas, 2015).

- Research Question 3: What factors contribute to reduced effectiveness?

Lack of rapport/safety (Brom et al, 2017; Payne et al., Miller-Karas, 2015), lack of client motivation (Dust, 2018; Stanley et al., 2011), cultural insensitivity (Miller-Karas, 2015), and more severe trauma symptomatology may contribute to reduced effectiveness of interventions (Parker et al., 2008). Clients who do not feel safe in the room with the therapist are unlikely to be able to benefit from the intervention, since brain areas necessary for learning are less active when an individual is severely stressed (Miller-Karas, 2015). If the wellness skills are perceived as not being personally useful, individuals may be less likely to learn and/or to practice the skills, and therefore may be less likely to benefit from them (Dust, 2018; Miller-Karas & Citron, 2013a). This might limit CRM's efficacy as a preventative intervention with the goal to increase resilience to trauma before a traumatic event, since individuals who have not experienced trauma may not perceive the skills as being useful (Dust, 2018). If practitioners fail to consider cultural factors, clients may choose not to participate in an intervention that contradicts their own deeply-held beliefs, no matter how well-researched the intervention may be (Miller-Karas, 2015). Finally,

individuals and communities with more severe compounded trauma symptoms may have a higher ceiling of change and require more intervention to address their symptoms (Parker et al., 2008).

- Research Question 4: What are the potential benefits and limitations of somatic interventions for treating trauma in a hospital-based setting?

A benefit of somatic interventions for treating trauma in a hospital-based setting is that they may be more effective than using only cognitive interventions. Cognitive interventions like Trauma-Focused Cognitive Behavioral Therapy (TFCBT) are recommended for treating PTSD (Berst, 2015) but some researchers have found that cognitive interventions may not be the most effective treatment in some cases because they do not address the nervous system or somatic symptoms (Berst, 2015; Grabbe & Miller, 2018). Parts of the brain responsible for verbal processing and introspection do not function at their best under stress or after a traumatic event, which can make it difficult for traumatized individuals to benefit from cognitive approaches right away (Miller-Karas, 2015). In the TRM/CRM model, cognitive symptoms of trauma are believed to be secondary to biological symptoms (Miller-Karas, 2015). As the nervous system is reset, new meanings and beliefs may emerge spontaneously. Somatic interventions do not have to be a replacement of cognitive interventions but rather as a compliment (Van der Kolk, 2014) or another tool in the toolbox (Leitch et al., 2009). Cognitive re-structuring may happen much more easily after the nervous system is restored to normal functioning (Miller-Karas, 2015; Payne et al., 2015a). Therefore, utilizing somatic interventions while an individual is still in the hospital can increase their ability to benefit from cognitive interventions later.

Another benefit of somatic interventions is that they are culturally-sensitive (Miller-Karas & Leitch, 2009). Cognitive approaches may have limited relevance in diverse cultures which prioritize the group or community over the individual. Additionally, insight-oriented interventions

may not congruent with cultural or political norms. Somatic approaches are less culture-specific because they focus on biologically programmed survival responses that are common to all human beings, rather than on individually-oriented insight and emotional expression. The "simple but powerful" (Miller-Karas, 2015, p. 2) wellness skills of the TRM and CRM models are "accessible and effective across borders, cultures, and belief systems" (Miller-Karas, 2015, p. 2). Individuals who may not seek the help of mental health practitioners because of cultural perspectives, spiritual beliefs, or aversion to psychological intervention may be more willing to engage with a somatic intervention (Miller-Karas, 2015). Multiple treatment sessions with a mental health professional may be perceived as resulting in being labeled mentally ill in communities where there is stigma. Learning about the nervous system helps clients understand the biology behind their symptoms, which can reduce stigma by teaching that symptoms are not caused by personal weakness or mental illness but instead are a normal function of human biology (Miller-Karas, 2015; Miller-Karas & Leitch, 2009)

CRM is a brief, early, and efficient somatic intervention that may be particularly well-suited to being implemented in an acute hospital setting. TRM and CRM are specifically designed for use in settings in which brief treatment is appropriate (Leitch et al., 2009). In many emergency settings, clinicians may only have brief access to survivors. As survivors recover, they may change jobs, relocate, or "be so consumed with gathering the pieces of their lives" (Leitch et al., 2009, p. 11) that they do not continue in treatment or cannot be located. Interventions like CRM wellness skills that can be easily learned within one or two sessions (Miller-Karas, 2015) are advantageous in such circumstances (Leitch et al., 2009). Biologically-focused interventions like CRM are also better-suited for implementation early after the trauma (Miller-Karas & Leitch, 2009). Early interventions that focus on stabilizing the nervous system can help reduce suffering immediately following an event as well as decrease the likelihood of future symptoms. Outcome studies of TRM/CRM indicate a reduction in post-traumatic stress symptoms for disaster survivors in 1-2 sessions of treatment provided 1 month to 3-8 months

after the trauma. Early interventions can accelerate natural recovery and equip survivors to better advocate for themselves, as it is easier to advocate for oneself when the nervous system is balanced and brain areas associated with verbal ability work better (Miller-Karas & Leitch, 2009). Interventions such as CRM that can create at least some positive change in low dosage are efficient (Miller-Karas & Leitch, 2009). They are cost-effective and can deliver relief to survivors more quickly, offering help before the survivor leaves the hospital and is potentially lost to treatment.

The sheer number of individuals who have experienced trauma would make it difficult, if not impossible, to train enough primary care providers worldwide to make a significant impact (Miller-Karas, 2015). CBT and EMDR are evidence-based practices for treating trauma, but require significant training on the part of the practitioner to become proficient. CRM can be taught by health professionals and lay-people with simple, easy-to-learn skills. Training local responders expands the capacity of local people to treat their own (Miller-Karas & Leitch, 2009). Plus, the skills can be used independently outside of treatment, decreasing dependence on mental health services.

Limitations of CRM in this setting are that CRM is a relatively new intervention and there is limited research on its efficacy (Berst, 2016; Brom et al, 2017; Grabbe & Miller-Karas, 2018; Miller-Karas, 2015). Research on TRM/CRM has taken place mostly in community settings in the wake of natural disasters (Grabbe & Miller, 2018). There has been no research on TRM/CRM for victims of violent crime while they are still recovering from their physical injuries in the hospital. This population may experience challenges that would not arise in other settings, such as that individuals who are more severely injured may not be able to participate in some of the wellness skills until they are more fully recovered, and other skills may have to be modified. For example, some individuals may not be ambulatory, which would prevent them from getting out of bed to practice Help Now! skills such as taking a walk or pushing against a wall. Individuals can be taught about the skills for later use, and other Help Now! skills—such as

noticing colors in the room or drinking a glass of water—can be used in the meanwhile. Individuals who are not ambulatory also may not be able to sit up without pain, and may need to ground by noticing the sensation of their body lying in the bed instead of the sensations of their feet making contact with the ground. It would be important for practitioners to modify the skills and the way they teach the skills as needed to suit each individual instead of using a one-size-fits-all approach.

**Literature Review Conclusion**

In conclusion, results from existing literature indicate that TRM/CRM is a promising brief, early somatic intervention for trauma based upon Peter Levine's SE. Although results seem promising, there remains a paucity of research on the effectiveness on TRM/CRM. Experimental studies are particularly needed to scientifically determine if TRM/CRM is an effective intervention for trauma. Future research can focus on the use of TRM/CRM in different contexts and with different populations. Perhaps the creation of a TRM/CRM resource for victims of violent crime in an acute hospital setting can contribute to the existing literature. Finally, a more in-depth systematic literature review that compares the effectiveness of somatic reviews with other approaches for trauma is needed, as it could better inform providers' choice of trauma intervention.

**PRISMA Review and JBI Critical Appraisal Checklists**

A PRISMA checklist and flow diagram were utilized by the reviewer to guide the systematic literature review process. The PRISMA checklist and flow diagram forms can be found in Appendix D. Additionally, a review was conducted by Dr. LaTonya Wood to reduce the potential effect of the primary reviewer's bias on study selection. JBI Critical Appraisal Checklists were utilized to review a sample of studies included in the review. Because of the

variety of methodologies represented by the studies, different versions of the JBI Critical Appraisal Checklist were utilized--including the JBI Critical Appraisal Checklist for Systematic Reviews and Research Syntheses, the JBI Critical Appraisal for Quasi-Experimental Studies, the JBI Critical Appraisal Checklist for Text and Opinion Papers, and the JBI Critical Appraisal for Randomized Controlled Trials. Copies of the checklists are provided in Appendix F. Findings from the review were consistent with the primary reviewer's decision to include studies in the analysis.

**Reviewer Feedback**

The purpose of this section is to discuss feedback from reviewers. Gabriela Ochoa, LMFT, the Coordinator of SLATRC, served as the first external reviewer. Elaine Miller-Karas, LCSW, an expert on somatic interventions for trauma and the executive director and co-founder of the Trauma Resource Institute, served as the second external reviewer. Both external reviewers consented for their identities to be included in the dissertation along with their feedback. They provided feedback based on the review form (see Appendix C).

**External Reviewer Responses to Review Form**

Responses to questions that asked external reviewers to rate the resource on a scale of 1-5 with 1 being "not very" and 5 being "very" are as follows:

1. Question: How user friendly is the resource?

Response: Both reviewers rated the resource as a "5" in this area.

2. Question: Are the instructions clear and easy to follow?

Response: Both reviewers rated the resource as a “5” in this area.

3. Question: How viable and sustainable are the interventions suggested in the resource manual?

Response: Both reviewers rated the resource as a “5” in this area.

4. Question: How consistent is the resource with current policies and procedures in the St. Francis trauma recovery unit or with current knowledge in the field?

Response: Both reviewers rated the resource as a “5” in this area.

The reviewers were also asked to give their opinion on the following questions:

1. Question: What are the strengths of the manual?

Response: Elaine Miller-Karas identified the following strengths: “clear,” “concise,” and “gives a clear rationale of why a somatic-based model is important to integrate into the care of patients.” Gabriela Ochoa’s response is as follows: “Educating and guiding the individual on their symptoms and body responses are strengths the manual provides. It educates the individual on the symptomology and the skills needed to cope with the symptoms. It provides the proper skills to self-regulate during times of distress and provides resources for additional assistance post trauma.”

2. Question: What potential barriers do you see to implementation?

Response: Elain Miller-Karas identified time as a barrier to implementation in a clinical setting. She advised that the resource “would have to be carefully structured of how it would be integrated into the care of patients.” Gabriela Ochoa responded that potential barriers “may

come from the individual and their reluctance to accept the help."

3. Question: Is the philosophy and approach of the resource guide consistent with the mission of SLATRC: "to mitigate the long-term physical, mental, and emotional trauma associated with violent crime by providing a multidisciplinary continuum of care that promotes healing and recovery"?

Response: Both reviewers responded that the resource guide was consistent with the goal of SLATRC. Elaine Miller-Karas responded: "Learning to manage sensations connected to traumatic experiences is an important self-help skill. More and more research is being conducted about the Community Resiliency Model and its effectiveness with PTSD." Gabriela Ochoa responded: "The philosophy and approach is consistent with the aim of SLATRC. SLATRC was created to help those that experienced a traumatic event and provide them the tools to cope with their symptoms. The resource guide provides both the guidance and education to overcome or cope with an individual's trauma related symptoms just like SLATRC. It provides education on the effects of trauma and assists with applying the skills to improve the symptoms."

4. Question: Are the interventions culturally sensitive and relevant for the population seen at the trauma recovery unit at St. Francis at the SLATRC? If not, what can be changed to improve the resource in this area?

Response: Both reviewers responded that the interventions were culturally sensitive and relevant for the target population. Elaine Miller-Karas gave the following reasons: "It is culturally relative because all humans have a nervous system and the model is loaded with verbiage that may make other models not accessible. It is simple and organic." Gabriela Ochoa gave the

following reasons: “The interventions are relevant to St. Francis because it is a trauma center that helps individuals on a daily basis who have experienced some sort of trauma. The interventions provided are culturally sensitive because they are more biologically focused and can be applied to any individual.”

5. Question: Please share any other feedback that could add to the strength of the resource:

Response: Elaine Miller-Karas described the resource as: “informative and well done in its presentation.” Gabriela Ochoa did not give additional feedback.

**Implementation of Feedback in Resource**

Both reviewers gave additional recommendations along with their responses to the review form questions. Gabriela Ochoa recommended homelessness resources be included in the resource because many individuals served by SLATRC are experiencing homelessness. Homelessness resources provided by Gabriela Ochoa were therefore added. Elaine Miller-Karas recommended two new peer-reviewed studies on CRM that were published after the researcher had completed the systematic literature review. Both studies contained findings that are relevant to providers at SLATRC for working with the target population and reducing secondary posttraumatic symptoms in providers. Therefore, findings were included in the resource. Since the studies were not discussed in the systematic literature review, they will be briefly outlined below.

The first study by Grabbe et al (2020) was a pilot of CRM to increase emotional self-regulation of women in addiction treatment. A single 5-hour CRM class was provided in an urban drug treatment center for impoverished women in the Southeastern US and data was collected from 20 female participants. The results were that participant somatic complaints, anger, and anxiety

symptoms had declined significantly with moderate-to-large effect size. Self-reported well-being also increased significantly with a small effect size. Additionally, participants reported they found the skills and concepts of CRM helpful and shared them with others. These findings are important to providers at SLATRC because addiction is often comorbid with individuals who have experienced trauma (Grabbe et al, 2020).

The second study by Grabbe, Higgins, Baird, Craven, and San Fratello, (2019) was to test the effectiveness of a 3-hour CRM intervention on resiliency in nurses. 196 nurses consented and were randomized into the CRM intervention or nutrition education control group. Findings were that the CRM group demonstrated improved well-being and resiliency with reductions in secondary traumatic stress and physical symptoms, with a moderate-to-large effect size. These findings are relevant to providers at SLATRC because they indicate that CRM skills can reduce secondary traumatic stress and increase resiliency for providers working with traumatized individuals. Although providers at SLATRC are not registered nurses, they are exposed to similar situations that may result in vicarious traumatization.

## Chapter 5: Discussion

The low number of relevant literature on TRM/CRM highlights the need for further research on this topic. The majority of the literature found during the systematic literature review was written by someone involved in creation of SE, TRM/CRM, or the Trauma Resource Institute. The writer of one of the dissertations listed friendship with the founders of TRM/CRM as a potential limitation (Berst, 2016). The potential for bias must therefore be considered in evaluating the results.

The methodology used in the included studies were mixed, which limited the ability to analyze results. Out of all of the results, only two of them were experimental studies and both were underpowered (Brom et al, 2017; Dust, 2018). One had 85 participants spread between three groups (Dust, 2018) while the other had 63 participants split between two groups (Brom et al, 2017). Two were qualitative studies (Elegaard & Pederson, 2012; Schauer, 2017): one with couples who had received TRM-informed couples' therapy (Schauer, 2017) and the other with individuals suffering from lower back pain (Elegaard & Pedersen, 2012). Nine were non-experimental or quasi-experimental designs (Stanley et al., 2011; Stanley, 2014; Miller-Karas & Leitch, 2009; Leitch et al., 2009; Berst, 2016; Leitch, 2007; Leitch et al., n.d.; Miller-Karas & Citron, 2013a; Miller-Karas & Citron, 2013b; Parker et al., 2008; Ruffalo, 2012; Baptiste, 2010). The remainder were literature reviews and discussions on the topic (Grabbe & Miller-Karas, 2018; Hricko, 2011; Miller-Karas, 2015; Leitch, n.d.; Payne et al.,, 2015b; Ruden, 2008; Van der Kolk, 2006; Whitehouse & Heller, 2008) or case studies (Heller & Heller, 2004; Payne et al., 2015a; Levine, 2003).

Although the literature was sparse, it was representative of a great deal of diversity. CRM trainings have been disseminated among representatives from marginalized groups including African American, Latino(a), LGBTQ, veterans, and at-risk youth (Miller-Karas & Citron, 2013). There was also diversity in regard to type of traumatic event. In addition to natural

disasters, SE and CRM/TRM has also been used to treat automobile trauma (Heller & Heller, 2004) burn trauma (Berst, 2016), combat trauma (Miller-Karas & Citron, 2013a; Miller-Karas & Citron, 2013b), chronic pain (Elegaard & Pedersen, 2012), and trauma from racism, homophobia, poverty, and untreated posttraumatic stress (Miller-Karas & Citron, 2013a; Miller-Karas & Citron, 2013b). It has been used to train first responders (Leitch & Vanslyke, 2009) such as case managers, social workers, counselors, psychologists, psychiatrists (Ruffalo, 2012; Baptiste, 2010), doctors, nurses, teachers, and counselors (Miller-Karas & Leitch, 2009) to increase local capacity to provide trauma resources (Ruffalo, 2012; Baptiste, 2010; Miller-Karas & Leitch, 2009; Leitch & Vanslyke, 2009) and to reduce the effects of vicarious traumatization (Miller-Karas, 2015). It has also been used to train representatives from underserved populations so that they can disseminate their knowledge to increase community resilience in areas with high concentrations of trauma while also practicing the skills themselves for emotional regulation (Miller-Karas & Citron, 2013a; Miller-Karas & Citron, 2013b). For non-English speaking populations, interventions were translated into local languages (Brom et al, 2017; Baptiste, 2010; Leitch, 2007; Miller-Karas, 2015; Miller-Karas & Leitch, 2009). Three of the studies measured TRM/CRM's effectiveness as a preventative intervention; however, results were inconclusive (Dust, 2018; Stanley et al., 2011; Stanley, 2014).

Results from existing literature indicate that TRM/CRM is a promising intervention for trauma. The results of three of the studies were inconclusive (Dust, 2018; Stanley et al., 2011; Stanley, 2014) but the majority indicate that TRM/CRM interventions significantly decrease PTSD symptoms (Berst, 2016; Brom et al, 2017; Leitch, 2007; Leitch et al., 2009; Leitch et al., n.d.; Parker et al., 2008; Payne et al., 2015b). Results also indicate that the majority of participants in train-the-trainer programs (91%-100%) were satisfied with TRM/CRM skills for self-care and for use with survivors (Baptiste, 2010; Miller-Karas & Citron, 2013a; Miller-Karas & Citron, 2013b; Miller-Karas & Leitch, 2009; Ruffalo, 2012).

## Limitations

When interpreting the results of this systematic literature review, the reader should be aware of the limitations. The first limitation was the paucity of literature on TRM and CRM. In particular, there was an insufficient number of experimental studies on the efficacy of TRM/CRM. Additionally, several of the studies included in the review were dissertations, and the methodologies of the studies were mixed which limited the reviewer's ability to analyze the results. The second limitation was the potential for bias. The reviewer's purpose in conducting the review was to inform the creation of a somatic resource. The reviewer may have unintentionally prioritized literature that confirmed her belief in the efficacy of somatic interventions, while disregarding studies that contradicted this belief. An additional reviewer screened for bias using the JBI Critical Appraisal checklists, but the potential for bias should nevertheless be considered. Additionally, much of the literature found was generated by individuals associated with somatic institutes, which increases the risk for bias. Finally, the third limitation was the reviewer's time limitations. Because the review was completed as part of a doctoral-level dissertation, the project needed to be completed within a limited time period. Had the reviewer had more time, she may have been able to conduct a more comprehensive review of the topic, including a review of other somatic interventions besides TRM/CRM, a more in-depth review of SE, and a comparison of the effectiveness of somatic interventions as opposed to other interventions for trauma, including cognitive approaches.

## Conclusion

The purpose of this dissertation was to create a resource for a brief early somatic intervention for victims of violent crime in acute hospital settings in Southeast Los Angeles. The resource is intended as a training manual that provides guidelines to administer a brief early somatic intervention based on CRM to the target population. The literature review indicated that TRM/CRM is a promising brief, early somatic intervention for trauma based upon Peter Levine's

SE. Although results seem promising, there remains a paucity of research on the effectiveness on TRM/CRM. Future research can focus on the use of TRM/CRM in different contexts and with different populations. A more in-depth systematic literature review that compares the effectiveness of somatic reviews with other approaches for trauma is needed, as it could better inform providers' choice of trauma intervention. Hopefully, research on the efficacy of a CRM resource for victims of violent crime in an acute hospital setting can contribute to the existing literature.

# REFERENCES

Alegría, M., Canino, G., Ríos, R., Vera, M., Calderón, J., Rusch, D., & Ortega, A. N. (2002). Mental health care for Latinos: Inequalities in use of specialty mental health services among Latinos, African Americans, and non-Latino Whites. *Psychiatric Services*, *53*(12), 1547-1555.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.

Baglivio, M. T., Wolff, K. T., Epps, N., & Nelson, R. (2017). Predicting adverse childhood experiences: The importance of neighborhood context in youth trauma among delinquent youth. *Crime & Delinquency*, *63*(2), 166-188.

Bailey, B. N., Delaney-Black, V., Hannigan, J. H., Ager, J., Sokol, R. J., & Covington, C. Y. (2005). Somatic complaints in children and community violence exposure. *Journal of Developmental & Behavioral Pediatrics*, *26*(5), 341-348.

Baptiste, A. J. (2010). *Haiti earthquake relief project's training evaluation report.* Retrieved October 13, 2019 from https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59ab513dd55b41cd8b09403f/1504399678256/HAITI-TRI_evaluation_summary_ajb.pdf

Benuto, L. T., & Bennett, N. (2015). Using prolonged exposure therapy to treat post-traumatic stress disorder: a Latina female with a complex trauma history. *International Journal of Psychology and Psychological Therapy*, *15*(1), 143-153.

Berst, M. L. (2016). *Treating trauma in burn victims using the Community Resiliency Model: a quasi-experimental study* (Doctoral dissertation). Retrieved from Proquest Dissertations and Theses. (10092246)

Brom, D., Stokar, Y., Lawi, C., Nuriel-Porat, V., Ziv, Y., Lerner, K., & Ross, G. (2017). Somatic experiencing for posttraumatic stress disorder: a randomized controlled outcome study. *Journal of Traumatic Stress*, *30*(3), 304-312.

Dazzan, P., & Barbui, C. (2015). From the 16th to the 21st Century: how we approach mental health problems and where do we go next? *Epidemiology and Psychiatric Sciences*, *24*(5), 365-367.

De Melo, T., & Aliya, J. (1998). *Factors relating to hispanic and non-hispanic white americans' willingness to seek psychotherapy* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (9834390)

Durham, T. A., Byllesby, B. M., Armour, C., Forbes, D., & Elhai, J. D. (2016). Relations between anger and DSM-5 posttraumatic stress disorder symptoms. *Psychiatry Research*, *244*, 403-409.

Dust, M. (2018). *Evidence-Based Trauma Prevention: Testing the Community Resiliency Model* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (10829562.)

Eisenman, D. P., Meredith, L. S., Rhodes, H., Green, B. L., Kaltman, S., Cassells, A., & Tobin, J. N. (2008). PTSD in Latino patients: Illness beliefs, treatment preferences, and implications for care. *Journal of General Internal Medicine*, *23*(9), 1386.

Ellegaard, H., & Pedersen, B. D. (2012). Stress is dominant in patients with depression and chronic low back pain. A qualitative study of psychotherapeutic interventions for patients with non-specific low back pain of 3–12 months' duration. *BMC Musculoskeletal Disorders*, *13*(1), 166.

Escobar, J. I., Cook, B., Chen, C. N., Gara, M. A., Alegría, M., Interian, A., & Diaz, E. (2010). Whether medically unexplained or not, three or more concurrent somatic symptoms predict psychopathology and service use in community populations. *Journal of Psychosomatic Research*, *69*(1), 1-8.

Escobar, J. I., Burnam, M. A., Karno, M., Forsythe, A., & Golding, J. M. (1987). Somatization in the community. *Archives of General Psychiatry*, *44*(8), 713-718.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., ... & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 245-258.

Grabbe, L., & Miller-Karas, E. (2018). The trauma resiliency model: a "bottom-up" intervention for trauma psychotherapy. *Journal of the American Psychiatric Nurses Association, 24*(1), 76-84.

Grabbe, L., Higgins, M. K., Baird, M., Craven, P. A., & San Fratello, S. (2019). The Community Resiliency Model® to promote nurse well-being. *Nursing Outlook*, *68* (3).

Grabbe, L., Higgins, M., Jordan, D., Noxsel, L., Gibson, B., & Murphy, J. (2020). The Community Resiliency Model®: a pilot of an interoception intervention to increase the emotional self-regulation of women in addiction treatment. *International Journal of Mental Health and Addiction* (2020). https://doi.org/10.1007/s11469-019-00189-9

Gubb, K. (2013). Psychosomatics today: A review of contemporary theory and practice. *The Psychoanalytic Review*, *100*(1), 103-142.

Hamilton, S., & Hamilton, T. J. (2015). Pedagogical tools to explore Cartesian mind-body dualism in the classroom: philosophical arguments and neuroscience illusions. *Frontiers in Psychology*, *6*, 1155.

Harrington, A. (2008). *The cure within: a history of mind-body medicine*. New York, NY: WW Norton & Company.

Heller, D. P., & Heller, L. (2004). Somatic experiencing in the treatment of automobile accident trauma. *US Association for Body Psycho-Therapy Journal*, *3* (2), 42-52.

Hunt, K. L., Martens, P. M., & Belcher, H. M. (2011). Risky business: Trauma exposure and rate of posttraumatic stress disorder in African American children and adolescents. *Journal of Traumatic Stress*, *24*(3), 365-369.

Hricko, A. C. (2011). Whole brain integration in the clinical application of Somatic Experiencing. US Assoc. *The USA Body Psychotherapy Journal*, *10*, 24–28.

Jones, D. J., Foster, S., Forehand, G., & O'Connell, C. (2005). Neighborhood violence and psychosocial adjustment in low-income urban African American children: Physical symptoms as a marker of child adjustment. *Journal of Child and Family Studies*, *14*(2) 237-249.

Kamimura, A., Christensen, N., Tabler, J., Prevedel, J. A., Ojha, U., Solis, S. P., & Reel, J. J. (2014). Depression, somatic symptoms, and perceived neighborhood environments among US-born and non-US-born free clinic patients. *Southern Medical Journal*, *107*(9), 591-596.

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E. J., Cardoso, G. & Florescu, S. (2017). Trauma and PTSD in the WHO world mental health surveys. *European Journal of Psychotraumatology*, *8* (sup5), 1353383.

Kipnis, J. (2018). Immune system: The "seventh sense". *Journal of Experimental Medicine*, *215*(2), 397-398.

Kouyoumdjian, H., Zamboanga, B. L., & Hansen, D. J. (2003). Barriers to community mental health services for Latinos: Treatment considerations. *Clinical Psychology: Science and Practice, 10*(4), 394-422.

Langmuir, J. I., Kirsh, S. G., & Classen, C. C. (2012). A pilot study of body-oriented group psychotherapy: Adapting sensorimotor psychotherapy for the group treatment of trauma. *Psychological Trauma: Theory, Research, Practice, and Policy*, 4(2), 214.

Leitch, M. L. (2007). Somatic Experiencing treatment with tsunami survivors in Thailand: Broadening the scope of early intervention. *Traumatology*, *13*(3), 11-20.

Leitch, L. (n.d.) Information gathering after trauma: Considerations for human rights work, peacebuilding, and interviews about traumatic events. Article retrieved from: https://www.researchgate.net/profile/Laurie_Leitch/publication/265272259_Leitch_Information_gathering_after_trauma_Information_gathering_after_trauma_Considerations_for_human_rights_work_peacebuilding_and_interviews_about_traumatic_events/links/54d0d6e90cf298d65669322e/Leitch-Information-gathering-after-trauma-Information-gathering-after-trauma-Considerations-for-human-rights-work-peacebuilding-and-interviews-about-traumatic-events.pdf

Leitch, M. L., Vanslyke, J., & Allen, M. (2009). Somatic experiencing treatment with social service workers following Hurricanes Katrina and Rita. *Social Work, 54*(1), 9-18.

Leitch, M. L., Vanslyke, J., & Allen, M. (n.d.). Caring for the Caregivers: Somatic Experiencing Treatment with Social Service Workers Following Hurricanes Katrina/Rita. Article retrieved from: https://www.energy-for-life.ch/documents/f_se_katrina_article.pdf

Levine, P. A. (2003). Panic, biology and reason: giving the body its due. *US Association of Body Psychother*apy *Journal, 2*, 5–21.

Levine, P. A. (2010). *In an unspoken voice: How the body releases trauma and restores goodness*. Berkeley, CA: North Atlantic Books.

Levine, P., & Kline, M. (2011). Use of somatic experiencing principles as a PTSD prevention tool for children and teens during the acute stress phase following an overwhelming event. In V. Ardino (Ed.), *Post-traumatic syndromes in childhood and adolescence: A handbook of research and practice* (p. 275–295). Hoboken, NJ: Wiley-Blackwell.

Liefland, L., Roberts, D. L., Ford, R., & Stevens, B. J. (2014). Depressive symptoms among help-seeking Latinas in a disadvantaged, urban, northeastern community mental health center. *Community mental health journal*, *50*(3), 331-335.

Loeb, T. B., Joseph, N. T., Wyatt, G. E., Zhang, M., Chin, D., Thames, A., & Aswad, Y. (2018). Predictors of somatic symptom severity: The role of cumulative history of trauma and adversity in a diverse community sample. *Psychological Trauma: Theory, Research, Practice, and Policy, 10*(5), 491–498. https://doi.org/10.1037/tra0000334

Los Angeles Department of City Planning (2015). Plans for a Healthy Los Angeles: A Health and Wellness Element of the General Plan. Retrieved from: https://planning.lacity.org/odocument/7f065983-ff10-4e76-81e5-e166c9b78a9e/Plan_for_a_Healthy_Los_Angeles.pdf

Maté, G. (2011). *When the body says no: The cost of hidden stress*. Toronto, Ontario: Vintage Canada.

Miller-Karas, E. (2015). *Building resilience to trauma: The trauma and community resiliency models.* New York, NY: Routledge.

Miller-Karas, E. & Citron, S. (2013a). Community Resiliency Model Evaluation, California Mental Health Services Act. Retrieved from https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59ab4d22579fb343a2ce7a68/1504398627341/Attachment-1-CRM-Evaluation-Report-Includes-Holistic-Group-09.05.13-FINAL-VERSION-51.pdf

Miller-Karas, E. & Citron, S. (2013b). Community Resiliency Model Evaluation, Veteran Extension Project, California Mental Health Services Act. Retrieved from https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59ab4e1fe5dd5b69d4098633/1504398880644/CRM+VEP-Evaluation-Report-03.11.13-v21.pdf

Miller-Karas, E., & Leitch, L. (2009). A case for using biologically-based mental health intervention in post-earthquake China: evaluation of training in the trauma resiliency model. *Emergency Mental Health*, *11*(4), 221-233.

Mondelli, V., & Pariante, C. M. (2015). On the heart, the mind, and how inflammation killed the Cartesian dualism. Commentary on the 2015 named series: psychological risk factors and Immune System Involvement in Cardiovascular Disease. *Brain, Behavior, and Immunity*, *50*, 14-17.

Montgomery, A. (2013). *Neurobiology essentials for clinicians: what every therapist needs to know (Norton Series on Interpersonal Neurobiology*. New York, NY: WW Norton & Company.

Mudrik, L., & Maoz, U. (2014). “Me & my brain”: exposing neuroscience's closet dualism. *Journal of Cognitive Neuroscience*, *27*(2), 211-221.

Murry, V. M., Heflinger, C. A., Suiter, S. V., & Brody, G. H. (2011). Examining perceptions about mental health care and help-seeking among rural African American families of adolescents. *Journal of Youth and Adolescence*, *40*(9), 1118-1131.

Nickel, J. C., Tripp, D. A., Pontari, M., Moldwin, R., Mayer, R., Carr, L. K., ... & Nordling, J. (2011). Childhood sexual trauma in women with interstitial cystitis/bladder pain syndrome: a case control study. *Canadian Urological Association Journal*, *5*(6), 410.

Nierenberg, A. A. (2009). Failure to integrate brain and mind (or blaming Descartes to understand a very modern dilemma about explanatory models, psychiatric treatment, and underfunding of clinical care and research). *CNS Spectrums*, *14*(11), 599-600.

Ogden, P., Fisher, J., Del Hierro, D. I., & Del Hierro, A. I. (2015). *Sensorimotor psychotherapy: Interventions for trauma and attachment*. New York, NY: WW Norton & Company.

Payne, P., Levine, P. A., & Crane-Godreau, M. A. (2015a). Somatic experiencing: using interoception and proprioception as core elements of trauma therapy. *Frontiers in Psychology*, *6*, 93.

Payne, P., Levine, P. A., & Crane-Godreau, M. A. (2015b). Corrigendum: Somatic Experiencing: using interoception and proprioception as core elements of trauma therapy. *Frontiers in Psychology*, 6, 423.

Parker, C., Doctor, R. M., & Selvam, R. (2008). Somatic therapy treatment effects with tsunami survivors. *Traumatology*, *14*(3), 103-109.

Peters, K. M., Carrico, D. J., Ibrahim, I. A., & Diokno, A. C. (2008). Characterization of a clinical cohort of 87 women with interstitial cystitis/painful bladder syndrome. *Urology*, *71*(4), 634-640.

Plan for a Healthy Los Angeles (2015). Accessed from Los Angeles City Planning Website on June, 2017 at: https://planning.lacity.org/odocument/7f065983-ff10-4e76-81e5-e166c9b78a9e/Plan_for_a_Healthy_Los_Angeles.pdf

Rangell, L. (2000). The mysterious leap: New psychoanalytic ideas about the mind-body connection. *Journal of Clinical Psychoanalysis*, *9*(2), 173-200.

Ruden, R. A. (2008). Encoding states: a model for the origin and treatment of complex psychogenic pain. *Traumatology* 14, 119–126. doi: 10.1177/1534765608315625

Ruffalo, M. (2012). *Trauma Resiliency Model (TRM) analysis: Trauma Resiliency Model (TRM) survey results; conducted by the County of San Bernardino Department of Behavioral Health.* Retrieved from https://static1.squarespace.com/static/596cfecaebbd1ab34dadab1d/t/59af36a7cd39c3ef80fea316/1504655016549/TRM-survey-2012-from-DBH.pdf

Schauer, M. (2017). *A interpretive phenomenological study of the clinical application of the Trauma Resiliency Model to couples with one partner with PTSD symptoms* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (1993380490)

Scott, S. T. (2007). Multiple traumatic experiences and the development of posttraumatic stress disorder. *Journal of Interpersonal Violence*, *22*(7), 932-938.

Shih, R. A., Schell, T. L., Hambarsoomian, K., Marshall, G. N., & Belzberg, H. (2010). Prevalence of PTSD and major depression following trauma-center hospitalization. *The Journal of Trauma*, *69*(6), 1560.

Slack, K. S., Font, S. A., & Jones, J. (2017). The complex interplay of adverse childhood experiences, race, and income. *Health & Social Work*, *42*(1), e24-e31.

Smith, Sheryl S. (2006). *The relationship between alexithymia and lower socioeconomic status African Americans* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (3191637)

Southeast Crime Statistics (2017). Retrieved from the Los Angeles Police Department website on June, 2017 at: http://assets.lapdonline.org/assets/pdf/soeprof.pdf

Stanley, E. A. (2014). Mindfulness-Based Mind Fitness Training: An Approach for Enhancing Performance and Building Resilience in High-Stress Contexts. In Ie, Amanda, Ngnoumen, Christelle T., Langer, Ellen (Eds), *The Wiley-Blackwell handbook of mindfulness* (964-985). Hoboken, NJ: Wiley-Blackwell.

Stanley, E. A., Schaldach, J. M., Kiyonaga, A., and Jha, A. P. (2011). Mindfulness- based mind fitness training: a case study of a high-stress predeployment military cohort. *Cognitive Behavioral Practice* 1*8*, 566–576. doi: 10.1016/j.cbpra.2010.08.002

Thayer, J. F., & Brosschot, J. F. (2005). Psychosomatics and psychopathology: looking up and down from the brain. *Psychoneuroendocrinology*, *30*(10), 1050-1058.

Trauma Resource Institute (2020). iChill app (version 3.1). Retrieved May 2020 from: www.ichillapp.com

van der Kolk, B. A. (2006). Clinical implications of neuroscience research in PTSD. Article retrieved from https://www.researchgate.net/profile/Bessel_Van_der_Kolk/publication/6894650_Clinical_Implications_of_Neuroscience_Research_in_PTSD/links/5dfe9402299bf10bc36ec688/Clinical-Implications-of-Neuroscience-Research-in-PTSD.pdf

van der Kolk, B. (2014). *The body keeps the score*. New York, NY: Viking.

Viola, R. S. (2014). The emergence of somatic psychology and bodymind therapy. *Body, Movement and Dance in Psychotherapy: An International Journal for Theory, Research and Practice, 9* (2). https://doi.org/10.1080/17432979.2013.856343

Violence Intervention (2017). Retrieved June, 2017 from Southern California Crossroads: www.socalcrossroads.org/home

Whitehouse, B., & Heller, D. P. (2008). Heart rate in trauma: patterns found in somatic experiencing and trauma resolution. *Biofeedback*, *36*(1).

Xue, J. M., Lin, P. Z., Sun, J. W., & Cao, F. L. (2017). Disrupted executive function and aggression in individuals with a history of adverse childhood experiences: an event-related potential study. *The Journal of nervous and mental disease*, *205*(12), 942-951.

Zatzick, D. F., Russo, J. E., & Katon, W. (2003). Somatic, posttraumatic stress, and depressive symptoms among injured patients treated in trauma surgery. *Psychosomatics*, *44*(6), 479-484.

# APPENDIX A

## Participant Consent Form

**IRB Number #**19-04-1043

**Study Title:** Resource for a Brief Early Somatic Intervention to Reduce Symptoms of Post-Traumatic Stress Disorder for Victims of Violent Crime in Acute Hospital Settings in Southeast Los Angeles

**Invitation:**

Dear _____,

My name is Jamie Gamboa, M.A., a doctoral student in clinical psychology at Pepperdine University, Graduate School of Education and Psychology, working under the supervision of LaTonya Wood, Ph.D. I am conducting a research project to develop an intervention resource guide containing recommendations that can be utilized by the South Los Angeles Trauma Recovery Center (SLATRC) to implement a brief early somatic intervention for victims of violent crime in acute hospital settings in Southeast Los Angeles. You may participate in this research if you are 19 years of age or older and have at least two (2) years of experience working at the Trauma Recovery Center with victims of violent crime OR as a member of the hospital staff, such as a trauma nurse or a lead physician in the trauma unit OR as an expert in somatic interventions for trauma.

**What is the reason for doing this research study?**

This is a research project that focuses on developing an intervention resource guide to implement a brief early somatic intervention for victims of violent crime in acute hospital settings in Southeast Los Angeles. In order to participate you must:

- Be 19 years of age or older
- Have at least two (2) years of experience working at the Trauma Recovery Center with victims of violent crime OR as a member of the hospital staff, such as a trauma nurse or a lead physician in the trauma unit OR as an expert in somatic interventions for trauma.

**What will be done during this research study?**

Participation in this study will require approximately 60-90 minutes of your time. You will be asked to review the intervention manual and respond to a questionnaire. Both the intervention manual and questionnaire will be available electronically.

**What are the possible risks of being in this research study?**

The possible risks for participating in this study are minimal, but may include mild levels of boredom or fatigue during review of the intervention guide and completion of the questionnaire. All research participants are advised to read the manual and complete the questionnaire at a convenient time, taking breaks as necessary to minimize these discomforts.

**What are the possible benefits to you?**

If you are to complete the intervention resource evaluation questionnaire, your feedback and time will help benefit the development of the intervention resource for victims of violent crime in Southeast Los Angeles, which will ultimately directly assist this population once the intervention is put into practice.

**How will information about you be protected?**

Your responses to this survey will be kept confidential. The Informed Consent Forms and all research materials will be stored and locked for five years on a personal laptop in a password protected file to ensure your privacy and confidentiality. After that time all information will be confidentiality disposed of. While comments submitted may be published or presented to a professional audience, no personal identifying information will be released.

**What are your rights as a research subject?**

You may ask any questions concerning this research and have those questions answered before agreeing to participate in or during the study. Your participation in this study is strictly voluntary.

For study related questions, please contact the investigators:

Jamie Gamboa, M.A. (Principal Investigator)

Pepperdine University, Graduate School of Education & Psychology

6100 Center Drive, Los Angeles, CA 90045

jamie.gamboa@pepperdine.edu

LaTonya Wood Ph.D. (Dissertation Chairperson)

Pepperdine University, Graduate School of Education & Psychology

6100 Center Drive, Los Angeles, CA 90045

latonya.wood@pepperdine.edu

For questions concerning your rights or complaints about the research, contact the Institutional Review Board (IRB):

- Phone: 1 (402) 472-6965
- Email: gpsirb@pepperdine.edu

**What will happen if you decide not to be in this research study or decide to stop participating once you start?**

You can decide not to be in this research study, or you can stop being in this research study ("withdraw") at any time before, during, or after the research begins for any reason. You also have the right to not answer any particular question. Deciding not to be in this research study or deciding to withdraw will not affect your relationship with the investigator or with Pepperdine University. You will not lose any benefits to which you are entitled.

**Documentation of Informed Consent**

You are voluntarily making a decision whether or not to participate in this research study. By completing and submitting your survey responses, you have given your consent to participate in this research. You should print a copy of this page for your records.

Signature_____

Date_____

Printed Name_____

Title_____

# APPENDIX B

## Review Form

*Please rate the following items on a scale of 1-5, with 1 being "not very" to 5 being "very."*

1. How user-friendly is the resource?

2. Are the instructions clear and easy to follow?

3. How viable and sustainable are the interventions suggested in the resource manual?

4a. If you are an employee at SLATRC or St. Francis Medical Center, how consistent is the resource with current policies and procedures in the St. Francis trauma unit?

4b. If you are an expert in somatic interventions for trauma, how consistent is the resource with current knowledge in the field?

*Please give your opinion on the following items.*

1. What are the strengths of the manual?

2. What potential barriers do you see to implementation?

3. Is the philosophy and approach of the resource guide consistent with the goal of SLATRC: "to mitigate the long-term physical, mental, and emotional trauma associated with violent crime by providing a multidisciplinary continuum of care that promotes healing and recovery"?

4. Are the interventions culturally sensitive and relevant for the population seen at the trauma unit at St. Francis and at the SLATRC? If not, what can be changed to improve the resource in this area?

5. Please share any other feedback that could add to the strength of the resource.

# APPENDIX C

## PRISMA Checklist and Flow Diagram

| Section/topic | # | Checklist item | Reported on page # |
|---|---|---|---|
| **TITLE** | | | |
| Title | 1 | Identify the report as a literature review. | |
| **ABSTRACT** | | | |
| Structured summary | 2 | Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; | |
| **INTRODUCTION** | | | |
| Rationale | 3 | Describe the rationale for the review in the context of what is already known about your topic. | |
| Objectives | 4 | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS). | |
| **METHODS** | | | |
| Eligibility criteria | 5 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale. | |
| Information sources | 6 | Describe all information sources (e.g., databases with dates of coverage) in the search and date last searched. | |
| Search | 7 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated. | |
| Study selection | 8 | State the process for selecting studies (i.e., screening, eligibility). | |
| Risk of bias in individual studies | 9 | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level). | |
| | | | |
| Risk of bias across studies | 10 | Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies). | |
| **RESULTS** | | | |
| Study selection | 11 | Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram. | |

*Figure C1*. Prisma 2009 checklist part 1.

| Section/topic | # | Checklist item | Reported on page # |
|---|---|---|---|
| Study characteristics | 12 | For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations. | |
| Synthesis of results of individual studies | 13 | For all outcomes considered (benefits or harms), present, for each study: (a) summary of results and (b) relationship to other studies under review (e.g. agreements or disagreements in methods, sampling, data collection or findings). | |
| **DISCUSSION** | | | |
| Summary of evidence | 14 | Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers). | |
| Limitations | 15 | Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias). | |
| **CONCLUSION** | | | |
| Conclusions | 16 | Provide a general interpretation of the results in the context of other evidence, and implications for future research. | |

*Adapted from:* Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA statement. *PLoS Medicine*, 6(6), e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org.

Page 2 of 2

*Figure C2*. Prisma 2009 checklist part 2.

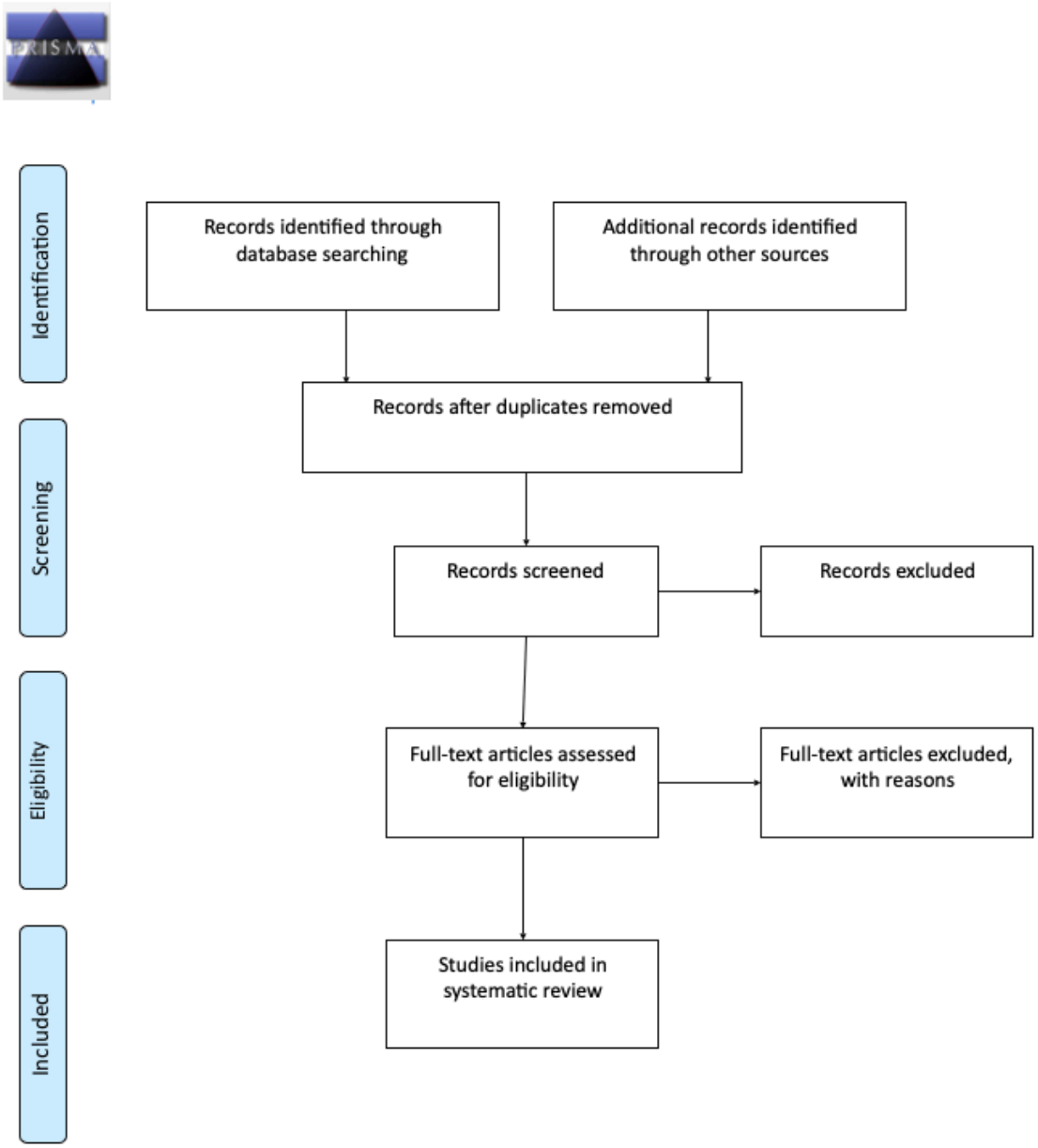


*Figure C3*. Prisma 2009 flow diagram.

# APPENDIX D

## TRM Level 1 Training Certificate


*Figure D4*. TRM level 1 training certificate.

# APPENDIX E

## JBI Critical Appraisal Checklists

## JBI Critical Appraisal Checklist for Systematic Reviews and Research Syntheses

Reviewer _____ Date _____
Author _____ Year _____ Record Number

| | | Yes | No | Unclear | Not applicable |
|---|---|---|---|---|---|
| 1. | Is the review question clearly and explicitly stated? | ☐ | ☐ | ☐ | ☐ |
| 2. | Were the inclusion criteria appropriate for the review question? | ☐ | ☐ | ☐ | ☐ |
| 3. | Was the search strategy appropriate? | ☐ | ☐ | ☐ | ☐ |
| 4. | Were the sources and resources used to search for studies adequate? | ☐ | ☐ | ☐ | ☐ |
| 5. | Were the criteria for appraising studies appropriate? | ☐ | ☐ | ☐ | ☐ |
| 6. | Was critical appraisal conducted by two or more reviewers independently? | ☐ | ☐ | ☐ | ☐ |
| 7. | Were there methods to minimize errors in data extraction? | ☐ | ☐ | ☐ | ☐ |
| 8. | Were the methods used to combine studies appropriate? | ☐ | ☐ | ☐ | ☐ |
| 9. | Was the likelihood of publication bias assessed? | ☐ | ☐ | ☐ | ☐ |
| 10. | Were recommendations for policy and/or practice supported by the reported data? | ☐ | ☐ | ☐ | ☐ |
| 11. | Were the specific directives for new research appropriate? | ☐ | ☐ | ☐ | ☐ |

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

_____

_____

_____

*Figure E5*. JBI critical appraisal checklist for systematic review and research syntheses.


## JBI Critical Appraisal Checklist for Text and Opinion Papers

Reviewer_____Date_____

Author_____Year_____Record Number _____.

| | Yes | No | Unclear | Not applicable |
|---|---|---|---|---|
| 1. Is the source of the opinion clearly identified? | ☐ | ☐ | ☐ | ☐ |
| 2. Does the source of opinion have standing in the field of expertise? | ☐ | ☐ | ☐ | ☐ |
| 3. Are the interests of the relevant population the central focus of the opinion? | ☐ | ☐ | ☐ | ☐ |
| 4. Is the stated position the result of an analytical process, and is there logic in the opinion expressed? | ☐ | ☐ | ☐ | ☐ |
| 5. Is there reference to the extant literature? | ☐ | ☐ | ☐ | ☐ |
| 6. Is any incongruence with the literature/sources logically defended? | ☐ | ☐ | ☐ | ☐ |

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____





*Figure E6.* JBI critical appraisal checklist for text and opinion papers.


## JBI Critical Appraisal Checklist for Quasi-Experimental Studies (non-randomized experimental studies)

Reviewer_____Date_____

Author _____Year_____Record Number_____

| | Yes | No | Unclear | Not applicable |
|---|---|---|---|---|
| 1. Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)? | ☐ | ☐ | ☐ | ☐ |
| 2. Were the participants included in any comparisons similar? | ☐ | ☐ | ☐ | ☐ |
| 3. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest? | ☐ | ☐ | ☐ | ☐ |
| 4. Was there a control group? | ☐ | ☐ | ☐ | ☐ |
| 5. Were there multiple measurements of the outcome both pre and post the intervention/exposure? | ☐ | ☐ | ☐ | ☐ |
| 6. Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed? | ☐ | ☐ | ☐ | ☐ |
| 7. Were the outcomes of participants included in any comparisons measured in the same way? | ☐ | ☐ | ☐ | ☐ |
| 8. Were outcomes measured in a reliable way? | ☐ | ☐ | ☐ | ☐ |
| 9. Was appropriate statistical analysis used? | ☐ | ☐ | ☐ | ☐ |

Overall appraisal: Include ☐ Exclude ☐ Seek further info ☐

Comments (Including reason for exclusion)

_____

_____

_____





*Figure E7.* JBI critical appraisal checklist for quasi-experimental studies.

# APPENDIX F

Resource

# Training Manual for Using the Community Resiliency Model Wellness Skills to Increase Resiliency and Healing from Trauma for Victims of Violent Crime in an Acute Hospital Setting

For Use by The Southern Los Angeles Trauma Recovery Center (SLATRC)

## Introduction

Trauma can temporarily overwhelm our ability to cope, affecting us emotionally, physically, and spiritually. Trauma is not just "in our heads." It causes physical changes to our brain and nervous system that affect us in a myriad of ways. Trauma has been correlated with numerous adverse health effects, and physical or somatic symptoms for which there is no clear medical explanation are not uncommon in traumatized children and adults. In fact, research indicates around 70% of people suffering from posttraumatic stress disorder (PTSD) report somatic symptoms. The most common physical complaints among individuals with trauma presenting in an outpatient medical setting include: generalized pain, headache, fatigue, and gastrointestinal distress. Other somatic symptoms associated with PTSD include poor appetite, dizziness, high blood pressure, low blood pressure, high blood sugar, asthma, stomach ulcer, gastritis, constipation, high cholesterol, arthritis, and liver and heart problems.

Elaine Miller-Karas, one of the creators of the Community Resiliency Model, observed that many of the patients she was working with at inner-city clinics— who were dealing with "the worst kinds of trauma" from poverty, violence, and racism— were not being connected to mental health services. This was not due to lack of resources, but because neither health providers nor the patients themselves had made the connection between the physical symptoms they were experiencing and the trauma they had been through. Somatic interventions that focus on the effects of trauma on the body and that include psychoeducation about how trauma affects the body can begin to bridge that gap.

Current neuroscience supports somatic interventions for trauma. Somatic interventions prioritize treating the effects of trauma on the body—such as dysregulation in the autonomic nervous system (ANS)—rather than focusing on thoughts, emotions, or insight. While somatic models also address these things, they are not the primary focus. Cognitive interventions for trauma like Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) may be more effective when used along with a somatic intervention. This is because areas of the brain necessary for cortical functions like verbal ability and introspection are not at their best when an individual is distressed or has just been through a traumatic event. Somatic interventions can help individuals reduce distress in the body and nervous system. This can increase feelings of safety and wellbeing, thereby improving an individual's ability to benefit from cognitive interventions.

Providing psychoeducation about the somatic effects of trauma can help individuals understand their symptoms better and reduce shame/stigma. Individuals may interpret trauma symptoms as being caused by personal weakness or inability to "let it go" and may worry about being labeled as mentally ill. Research indicates that trauma symptoms are biologically-based and caused by the human body's natural, normal response to danger and stress. Psychoeducation can also increase client motivation to engage in somatic interventions. Clients who understand the rationale behind an intervention are naturally more likely to be motivated to participate. Additionally, psychoeducation that increases clients' understanding of how somatic symptoms can result from trauma can have a positive effect on motivation for clients who primarily experience somatic, as opposed to psychological, symptoms of trauma. Clients with primarily somatic symptoms of trauma may otherwise interpret trauma interventions as not being personally relevant for them.

After experiencing trauma, it is important to remember that human beings have an innate ability to heal and be resilient. Research indicates that resiliency moderates the relationship between trauma exposure and development of trauma symptoms. Resilient people are better

able to get back on their feet after a fall and create meaning from their experiences. Chronic stress from trauma can interfere with resilience, but there is hope: neuroplasticity. Neuroplasticity means that life experience changes the physical structure of the brain. After trauma, neural pathways associated with the traumatic event such as avoidance behaviors and triggers can become well-worn in the brain, but we can change this by strengthening healthier responses instead. Miller-Karas notes that when we pay attention to well-being it grows, just as flowers grow when you water them. You can choose to water the flowers instead of the weeds. Even if weeds remain, you can pay attention to the rest of the garden. In this way, unhealthy pathways developed after trauma are weakened until they become obsolete.

**Somatic Symptoms of Trauma**

To understand how trauma affects us, it helps to understand a little bit about how our bodies reacts to stress and danger. It all starts in the amygdala, a small, almond-shaped structure in our brains that processes intense emotions such as fear and warns us of danger. Basically, it's like our brain's alarm system. The amygdala helps us survive because it allows us to react to danger really fast…even before we've had time to realize we're in danger. For an example, just think about the last time you accidentally touched something hot, like a stove. You probably removed your hand from the stove before you even realized you were touching it. Sometimes it's important to act first and think later.

The amygdala sends a distress signal to the hypothalamus, the command center of the brain, which communicates it to the rest of the body through the central nervous system. The central nervous system (CNS) has two major divisions: the brain + spinal cord and the peripheral nervous system (PNS). The peripheral nervous system is also divided into two: the somatic nervous system (internal physical sensations) and the autonomic nervous system. The autonomic nervous system (ANS) is like the body's thermostat, regulating the internal state of the body to maintain balance.

The ANS is responsible for fight and flight responses. In the case of threat, the body mobilizes its resources to prioritize survival over everything else (like mobilizing an army to prepare for battle). When someone cannot fight or run away, the freeze response is used. Think of a possum "playing dead" for protection from a predator. Another nervous system response is tend & befriend. T&B refers to protection of offspring (tending) and seeking out the social group for mutual defense (befriending).

The ANS is divided into the sympathetic and parasympathetic branches. The sympathetic nervous system is like the body's gas pedal. It helps us get ready to fight or run away. The parasympathetic nervous system is like the body's brake pedal. It helps us "rest and digest" after the danger is over. When the amygdala communicates danger to the nervous system it also communicates with the HPA (Hypothalamic-pituitary-adrenal) axis. The HPA axis activates stress hormones and nerve impulses that increase blood pressure, heart rate, and oxygen intake (everything you need to fight or run away).

Normally, our bodies return to balance after the danger has passed. This doesn't always happen when you've been through trauma because it can feel like the trauma is still happening, even when it's over. Our body's stress response was only meant to be used for short periods of time. When it goes on indefinitely, the same stress responses that helps us survive can cause harm. When we're over-exposed to chronic stress and trauma, we might start to over-rely on the amygdala. This can make it hard for us to tell the difference between something dangerous and something not dangerous (like a fire alarm that goes off when you accidentally burn toast, or never goes off in the face of an inferno). It can also make it difficult to tell how dangerous something is so we may wind up using a strategy that's less effective. "Act first and think later" is a good strategy when you're running away from a tiger, but may not be effective when you're stressed out about relationship problems.

Triggers are anything that remind someone about a traumatic experience. Triggers can be external things we experience with our senses (things we hear, see, smell, taste, etc). Triggers can also be internal things such as thoughts, feelings, or body sensations (i.e. rapid heartbeat or shallow breathing). When people with PTSD are triggered, the amygdala detects danger and sets off the alarm. That's why when someone who has been through trauma is

triggered, it feels like a life-threatening situation. It feels like the trauma is happening all over again, and our bodies react to try to keep us safe.

Trauma and chronic stress can also result in dysregulation of the ANS which is why the danger signals continue after the danger has passed instead of returning to balance. People with trauma might get stuck in the sympathetic nervous system response (the gas pedal). This can make it hard to relax because you feel like you have to always be on your guard to protect yourself. It also can cause stomach problems because your body is prioritizing the survival response (punch or run away) over digesting food. People with trauma might also get stuck in the parasympathetic nervous response, making you feel disconnected from yourself and others. Sometimes people go back and forth between the two.

People who have been through trauma may continue to secrete large amounts of stress hormones long after the danger has passed. This can cause memory and attention problems, irritability, and sleep disorders. Physical changes in your body caused by a dysregulated HPA system can affect your immune system and cause health issues. That's why people who have been through trauma may get sick more often and more easily. If you're running from a tiger, it makes sense to use energy to run away instead of fueling your immune system. However, if we feel like we're running away from danger every day of our lives, it can have a negative effect on our health and can cause distress.

## Introduction to the Community Resiliency Model

In 2004, Elaine Miller-Karas, LCSW and Geneie Everette, PhD created Trauma First Aide (TFA), the first brief early biological model of intervention for trauma. Both were trained in Peter Levine's Somatic Experiencing Model. In December 2006, Laurie Leitch, PhD and Miller-Karas started working together and co-founded the Trauma Resource Institute (TRI)—a non-profit organization dedicated to bringing culturally sensitive interventions to underserved communities worldwide. Everette left to develop Trauma First Aide Associates in 2007. Leitch and Miller-Karas changed the name of Trauma First Aide to Trauma Resiliency Model (TRM) to indicate the model was not only for acute "shock" trauma but developmental trauma as well. Leitch resigned from TRI in 2012 to pursue a separate endeavor and Miller-Karas became the executive director of TRI. The Trauma Resiliency Model was designed to help clients reprocess traumatic experiences. TRM practitioners help individuals understand the biology of traumatic stress reactions and use 9 skills that can be simply learned and taught to "reset" the nervous system, bringing it back into balance. TRM skills utilize the human body's natural ability to self-regulate with biological stabilizing skills, including tracking internal sensations to distinguish between those of well-being and those of distress.

The Community Resiliency Model (CRM) was created from the first 6 of the 9 TRM skills. It is a stand-alone set of skills available to the general population through a free app "ichill" or at www.ichillapp.com. The skills are intended to help people recognize signs of dysregulation in their nervous system and correct the imbalance on their own. CRM was developed as an independent model from TRM to create a model of self-care that was accessible and affordable for adults and children from diverse educational, cultural, and ethnic communities. CRM can be taught by community members to increase resilience to trauma in their community. The skills can be taught by laypeople and used for their own self-care and self-regulation.

CRM recognizes trauma as a biological reaction resulting from extraordinary life circumstances. Because trauma responses are biological, human beings have common reactions to stress and trauma, even across ethnicities and cultures. CRM conceptualizes cognitive symptoms of trauma as being secondary to biological symptoms. Therefore, as the nervous system is reset, new meanings and beliefs may emerge spontaneously. Personal meanings about traumatic events can change in a way that creates space for more compassion for self and others. CRM also posits that human beings are inherently resilient and the body is "a system that is elegantly designed to return to balance."

The "cornerstone concept" of CRM is the Resilient Zone (RZ), which Miller-Karas defines as "natural rhythm or balanced flow of energy and human vitality where there is the greatest capacity for balanced thinking and feeling, being our best selves, and functioning well." The brain functions better in the RZ. Some individuals, because of temperament or life challenges, may have a naturally narrow RZ while others may have a naturally wide RZ. We all have narrowed RZs and are more likely to be "bumped out" of the RZ when we are hungry, angry, tired, bored, lonely, or in pain. Sometimes individuals need extra help in getting back to the RZ. This is especially true after trauma.

Outside of the RZ on either side exist the high zone and the low zone. The high zone is sympathetic nervous system hyperarousal. When in this zone, individuals may feel edgy and irritable. They may be angry, panicked, anxious, and in pain. They may be hypervigilent to the threat of danger. The opposite is the low zone, which is parasympathetic hyperarousal. When in the low zone, individuals may feel numb, disconnected from others or self, sad, depressed,

exhausted, and tired. After trauma, individuals may oscillate between the high zone and the low zone. They may even feel stuck on both at once, like pressing on the gas pedal and the brake at the same time.

The concept of the RZ offers an explanatory model for trauma symptoms from a biological perspective, which offers hope that clients' symptoms are not completely out of their control. Clients can use skills to widen their RZ or return to it when they sense they are outside their RZ. The goal of CRM is to help people become more aware of the RZ by learning to track sensations connected to it and distinguish between sensations of distress and well-being. This can help individuals return to their RZ when they are bumped out.

Another goal of CRM is cross-cultural adaptability. The simple but powerful wellness skills of CRM are accessible and have demonstrated efficacy across borders, cultures, belief systems, ethnicities, and developmental ages. The CRM wellness skills have been taught in many countries and languages. Even though biological reactions to trauma are considered universal, CRM also acknowledges that learning about a person's culture is critical when teaching the wellness skills. Cultural beliefs and experiences shape how people within a community interpret trauma. Trauma interventions are better received and more effective if they are communicated in a way that is considerate and respectful of deeply-held cultural beliefs. As an example, there is a great deal of research supporting mindfulness as an effective treatment for trauma, but mindfulness may not be well-received by certain communities because of the perceived connection to Buddhism.

Miller-Karas defines cultural sensitivity as "the ability to empathize with and understand the beliefs, customs, languages, and rituals of a particular culture." To increase cultural sensitivity, CRM training teams are required to perform personal evaluations of their attitudes and beliefs about working with cultures that may have attitudes and beliefs different from their own. In order to create interventions that are culturally informed, CRM training teams learn about local dialects and idioms used to describe suffering. They also incorporate images of people who reflect the community in their training materials. To respect community beliefs, the biology of the human nervous system is introduced as "a co-existing concept with pre-existing cultural explanatory models." Spirituality is not only respected but embraced by the CRM model. Miller-Karas notes that when people all over the world describe their spiritual beliefs, "there is a universal response of deep parasympathetic breath accompanied by muscle relaxation." Spirituality can therefore be incorporated into the trauma intervention as resource for healing.

Increased access to mental health services for underserved populations is another goal of the model and is the reason CRM was created. CRM's wellness skills can increase access to care in two ways. The first is that the wellness skills are designed to be taught quickly and easily in almost any setting. Because so many individuals experience trauma all over the world, it is difficult to train enough providers to treat them all. Treatment models such as Trauma-Focused Cognitive Behavioral Therapy (TFCBT) are effective for treating trauma, but require a significant time commitment for practitioners to become proficient. A brief early somatic intervention like CRM can be quickly learned by providers and can be efficiently utilized in emergency settings where clinicians may only have brief access to survivors. Traumatic events can be chaotic, especially in the case of natural disasters. Survivors are often not connected to long-term mental health services, so teaching the skills before discharge from the hospital can increase the likelihood that survivors receive care.

The second way CRM improves access is by disseminating wellness skills among populations that otherwise may not be connected to services due to lack of resources and

community attitudes about mental health. Mental health services are often inadequate for underserved populations and when they exist, they are often provided in larger group settings, since individual therapy may be either too expensive or culturally inappropriate. Individuals in rural communities may have limited access to services due to lack of availability, while inner city clinics ore often over-crowded and under-funded. Some populations, like veterans, may not be psychologically-oriented and prefer to seek a member of their social network for help rather than a therapist. Community members (such as clergy) and professionals (such as doctors and nurses) can be trained to teach the CRM wellness skills to provide resiliency training to more people in the community. The skills can be used by individuals for their own self-care and self-regulation and taught to family members and friends so they can do the same.

## The 6 Community Resiliency Model Wellness Skills

The CRM wellness skills can be taught by non-mental health professionals to members of their communities to increase community resilience. They can also be used by individuals for self-care and self-regulation. Once someone has the tools, they can regulate their own nervous system during times of distress.

The skills can be used in any order or independently. Skills should be modified as necessary to meet the needs of the unique individual in front of you. Skills may need to be modified to be accessible for individuals who are not ambulatory due to their injuries.

The 6 Wellness skills include:
1. Tracking
2. Resource/resourcing intensification
3. Grounding
4. Gestures
5. Help Now!
6. Shift and Stay

Practitioners can reference the client handouts included in this training manual when teaching the skills. The handouts include descriptions of the skills as well as exercises to practice them.

## Tracking

The first skill is Tracking: paying attention to sensations within the body. It is helpful to learn the language of sensation because that's how we "talk" to the nervous system. Tracking helps individuals learn how to bring balance back to the nervous system and get back to the RZ when they are in the high zone, the low zone, or both.

At first, individuals may only be aware of uncomfortable sensations, but there are usually places in the body that are not in distress or are in less distress. There may even be places that feel good. To get back into the RZ, it is necessary to pay attention to places of comfort in the body. This will help individuals put the brake on if the accelerator is stuck on high. Paying attention means noticing the internal sensations while focusing on areas in the body that are less distressed, neutral, or positive.

When individuals have been bumped out of the RZ, the body can feel like the enemy. Tracking inner sensations, even ones that are comfortable, can be difficult at first, but as individuals get more experience in tracking, finding inner sensations of comfort will get easier and easier.

It may also be difficult at first for clients to be able to express their experience of physical sensations in words, especially if they are not used to doing so. Practitioners may need to model this for clients by giving examples (i.e. "I know that when I feel happy, I notice a pleasant tingling sensation throughout my entire body. When I feel mad, I notice heat in my chest, like a white-hot poker. When I feel worried, I notice a fluttering sensation like butterflies in my stomach").

Providers can also suggest vocabulary for clients to use. For example, they can suggest describing qualities of the physical sensations such as the "shape" (i.e. round, triangular, oval, rectangular, square), "size" (small, medium, large), "look" (flat, curved, bright, dark, color), "smell" (rancid, fresh, floral, fragrant), "volume" (loud, soft), "quality" (squeak, scream, grunt, cry, laugh), "taste" (sweet, sour, bitter, tasteless, spicy), "temperature" (cool, cold, icy, lukewarm, warm, hot, neutral) or "touch" (hard, soft, sharp, rough, pointed, furry).

Although the skills can be taught in any order, tracking is generally taught first. Tracking should be used when practicing the other 5 skills so individuals can notice how wellness skills increase pleasant/neutral sensations in the body.

## Resourcing/Resource Intensification

The second skill is resourcing/resource intensification. Resources are anything that increases an individual's sense of internal resiliency and self-efficacy and are associated with positive internal sensations. This can help stabilize the nervous system and bring the individual back to the RZ. Resource intensification is a process of enhancing the description of the resource, which helps strengthen the resource and pleasant/neutral sensations associated with it.

There are 3 types of resources.

1. External resources such as people, places, spiritual beliefs, skills, hobbies, and pets.
2. Internal resources such as values and beliefs, positive character traits, body strengths, positive memories.
3. Imagined resources, which involves imagining a resource and what life would be like if the resource existed. These can include imaginary places, fictional characters, or even imagined superpowers and can be helpful in cases when individuals are not able to identify external/internal resources.

It is better for clients to discover their own resources rather than have the practitioner suggest resources for them, as clients are the experts on their own lives and are likely to think of resources that are more personally relevant to them. Practitioners can introduce resourcing by giving clients education about resources and types of resources. They can then ask clients what resources they would like to practice using for themselves.

While teaching resourcing/resource intensification to clients, practitioners should be aware of the negativity bias. Negative sensations like pain, fatigue, and hunger are more likely to be noticed and attended to than neutral or pleasant body sensations. Additionally, highly-charged negative experiences are stored more quickly in memory as 2/3rds of the amygdala's neurons search for "bad news." Positive experiences need to be held in awareness for longer to facilitate their transfer from short-term to long-term memory. Therefore, clients need to focus on resources longer and in greater detail to override the negativity bias.

Practitioners should also be aware of the "dual nature" of some resources. Clients may become emotional when discussing a resource associated with sadness or pain (i.e. discussing a grandmother who has passed away). If this happens, practitioners can be present with the client's experience and then ask them to share positive things about the resource ("What are some good times you had with your grandmother?"). However, if the client is unable to shift to positive or neutral aspects of the resource, the practitioner may need to ask them to think of another resource.

Practitioners can use CRM's Survival Resource Questions to identify resources related to the traumatic event. Survival Resource Questions can help remind clients that the event is over and they survived, which shifts focus from trauma to the resiliency and internal strength that exists within every individual. When people have been traumatized, they experience the trauma as if it is still happening and certain to happen again. The Survival Resource Questions establish that there is an "after" and can help clients perceive the body's capacity to switch from trauma activation to relaxation.

The following are examples of Survival Resource Questions:

1. Can you remember the moment when you knew you were going to survive?
2. Can you remember the moment when help arrived?
3. Who else made it through?
4. What gives you the strength to get through this now?
5. When you have experienced other difficult times in your life, what helped you get through?
6. Who is helping you the most now?

## Grounding

The third skill is Grounding. When an individual has been through trauma, triggers can make them feel like they are in the past, when the trauma was still happening. Grounding helps bring the body into the here-and-now by noticing how the body or a part of the body is making contact with a surface. This helps remind the body that it is safe.

Individuals can ground sitting down, lying down, or standing. Individuals can also bring awareness to hands/feet by making contact with a surface. Grounding can even be done floating in the ocean.

Grounding should not be introduced until after the client has learned tracking and resourcing. Tracking should be used to focus on pleasant/neutral body sensations associated with grounding, and resourcing can be used for clients who do not respond well to grounding. If sensations of breath or heart rate are associated with trauma, drawing attention to the body in the present moment can trigger a flashback, in which case it may be necessary to discontinue grounding and switch to resourcing.

Grounding is helpful for individuals who are in the low zone, although some may need a physical sense of weight on their body. Practitioners can use weighted items like a heavy pillow, bean bag, or weighted blanket. Practitioners should check in with client's comfort by asking how close they want the practitioner to be before beginning the grounding exercise. Individuals who are shorter of stature may be accustomed to their feet not touching the ground. Practitioners can provide pillows, books, or a platform so they can sense their feet against a solid surface.

## Gesturing

The fourth skill is gesturing. Gestures are defined by Merriam-Webster as “movement usually of the body or limbs that expresses or emphasizes an idea, sentiment, or attitude and the use of motions of the limbs or body as expression.” Gestures are inherently self-soothing and can be part of an individual’s répertoire for self-regulation.

There are four types of gestures:

1. Self-calming—Self-calming gestures brings comfort and safety. These may include gestures like hugging oneself or stroking one’s arm.
2. Gestures of release—Gestures of release represent the body coming back into balance and sensations of something distressing leaving the body. These may include gestures like sweeping something away with one’s hands or shaking hands/arms as if to discharge unpleasant energy.
3. Universal movements— Universal movements represent wholeness, spiritual beliefs, or deep personal meaning. These may include gestures like putting one’s hands together as if in prayer or crossing oneself.
4. Protective movements—Protective gestures represent the body’s attempt to defend itself from harm. These gestures may include curling into fetal position, punching the air, or putting one’s hands in front of oneself as if to say “STOP.”

Gestures may emerge spontaneously while clients are talking. Practitioners can also help clients identify gestures that are self-soothing to bring awareness to the present moment and return nervous system back to the RZ. Asking clients to slow down the gesture can deepen the embodied sense of the gesture, thus increasing positive/neutral sensations associated with it. Clients should be encouraged to use tracking skill to track positive/neutral sensations associated with gestures.

Bringing attention to gestures that clients may not be consciously aware of may feel intrusive for some. Practitioners can explain why they are bringing attention to gestures by saying: “This model helps bring into awareness comforting or self-soothing gestures that are often just under conscious awareness. With your permission, from time to time, I will draw your attention to gestures you make to help you learn about the gestures that may help you more easily return to your RZ.”

**Help Now!**

Help Now! is the fifth skill. This skill includes specific strategies to bring down activation in the nervous system when an individual is stuck in high or low zone. Help Now! strategies are intended to help the individual focus on something else besides distress and sensations of being overwhelmed.

The ten Help Now! strategies are:

1. Drink a glass of water, a cup of tea, or cup of juice.
2. Look around the room or wherever you are, paying attention to anything that catches your attention.
3. Name 6 colors you see in the room (or outside)
4. Open your eyes if they have a tendency to shut.
5. Count backwards from 10 as you walk around the room.
6. If you're inside, notice the furniture, and touch the surface of a couch or chair, noticing if it's hard, soft, or rough.
7. Notice the temperature in the room.
8. Notice the sounds within and outside the room.
9. Walk and pay attention to the movements in your arms and legs and how your feet are making contact with the ground.
10. Push your hands against the wall or door slowly and notice your muscles pushing.

Practitioners can teach clients the Help Now! strategies and encourage them to use them when needed. Not all of the strategies work for everyone, so clients should be encouraged to experiment and discover which ones work best for them. Clients can choose to share Help Now! strategies with their client's social support network so that they can help the client get back to RZ or use them for their own self-regulation.

Help Now! strategies can also be used when the client cannot or does not want to talk. It is important for practitioners not to push talking. Instead, they can invite the client to bring awareness to the present moment by suggesting the strategies as options, which can be empowering at times when clients feel like all of their choices have been taken away.

Examples of how to suggest the strategies in a conversational way are as follows:

1. Would it be helpful to go for a walk together?
2. Sometimes it helps to get the energy of anxiousness out by pushing against the wall with our hands or pushing our backs against the wall. Do you want to do it with me?
3. Can I get you a drink of water?
4. Sometimes it can help to look around the room and see what catches your attention. Is there a color you like for example?
5. When I am not feeling like my best self, I have found it helpful to remember a time in my life that was better than this moment.
6. If I am really anxious, sometimes it helps me to count down from 20. Would you like to try it with me?
7. I found this app called iChill and I listen to it when I am down or too anxious. You might want to think about using it when you are stressed or down.

## Shift and Stay

The sixth and final wellness skill of the CRM model is Shift and Stay. Shift and Stay means shifting attention from something unpleasant or distressing to something neutral or pleasant and staying with those sensations. When bumped out of the Resilient Zone, clients can shift their attention to a place inside that feels calmer or more neutral. They can also shift attention to a resource, grounding to bring their attention to the present moment, or a gesture that is self-soothing. Then, they can stay with those sensations until they feel more stable.

When individuals go through a traumatic experience, what happened to them was outside of their control. Individuals also do not choose to experience trauma symptoms. Teaching clients that they can choose to focus on different aspects of their experience that exist alongside distressing symptoms can be empowering.

Providers can teach Shift and Stay by saying: “Sometimes when we are experiencing something unpleasant, it helps to focus our attention on something that is pleasant or neutral. You can shift your attention to a place in the body that feels more comfortable. If there isn’t anywhere in the body that feels pleasant or comfortable, you can shift to a place that feels neutral. You can also shift to one of your resources, grounding, or self-soothing. Once you’ve found something pleasant/neutral, you can track those sensations and stay there.”

## Benefits for SLATRC

CRM is a brief, early, and efficient somatic intervention for trauma. CRM has been demonstrated to increase subjective reports of resiliency and well-being while reducing physical and psychological symptoms of distress in individuals who have been through trauma as well as individuals recovering from addiction, which is often associated with trauma.

CRM is particularly well-suited to being implemented in an acute hospital setting as it is specifically designed for use in settings in which brief treatment is appropriate. In many emergency settings, clinicians may only have brief access to survivors. As survivors recover, they may change jobs, relocate, or be so preoccupied with picking up the pieces of their lives that they do not continue in treatment or cannot be located. Interventions like CRM wellness skills that can be easily learned within one or two sessions are advantageous in such circumstances. Additionally, a somatic intervention like CRM may help clients understand the connection between physical symptoms and trauma. This can help increase motivation to engage with treatment for clients who otherwise may not perceive mental health interventions as being relevant for them.

Biologically-focused interventions like CRM are also better-suited for implementation early after the trauma, as is the case for individuals still recovering from their injuries in the hospital. Early interventions that focus on stabilizing the nervous system can help reduce suffering immediately following an event as well as decrease the likelihood of future symptoms. Outcome studies indicate a reduction in post-traumatic stress symptoms for disaster survivors in 1-2 sessions of treatment provided 1 month to 3-8 months after the trauma. Early interventions can accelerate natural recovery and equip survivors to better advocate for themselves, as it is easier to advocate for oneself when the nervous system is balanced and brain areas associated with verbal ability work better.

Interventions such as CRM that can create at least some positive change in low dosage are efficient. They are cost-effective and can deliver relief to survivors more quickly, offering help before the survivor leaves the hospital and is potentially lost to treatment. The sheer number of individuals who have experienced trauma would make it difficult, if not impossible, to train enough primary care providers worldwide to make a significant impact. CBT interventions require significant training on the part of the practitioner to become proficient. CRM can be taught by health professionals and lay-people with simple, easy-to-learn skills. Training local responders expands the capacity of local people to treat their own. Plus, the skills can be used independently outside of treatment, decreasing dependence on mental health services.

A brief early somatic intervention like CRM may also increase the effectiveness of cognitive treatments after individuals leave the hospital. Parts of the brain responsible for verbal processing and introspection do not function at their best under stress or after a traumatic event, which can make it difficult for traumatized individuals to benefit from cognitive approaches right away. Somatic interventions do not have to be a replacement for cognitive interventions but rather a compliment or “another tool in the toolbox.”

Another benefit of somatic interventions like CRM is that they are culturally-sensitive, which is important considering the diverse population served by SLATRC. Cognitive approaches may have limited relevance in diverse cultures which prioritize the group or community over the individual. Additionally, insight-oriented interventions may not be congruent with cultural or political norms. Somatic approaches are less culture-specific because they focus on biologically-programmed survival responses that are common to all human beings, rather than

on individually-oriented insight and emotional expression. The “simple but powerful” wellness skills of the TRM and CRM models are “accessible and effective across borders, cultures, and belief systems.

Some individuals may not seek the help of mental health practitioners because of cultural perspectives, spiritual beliefs, or aversion to psychological interventions but may be more willing to engage with a somatic intervention. When support is needed, some populations may be more likely to reach out to a member of the community than a mental health professional. Multiple treatment sessions with a mental health professional may be perceived as resulting in being labeled mentally ill in communities where there is stigma. Learning about the nervous system helps clients understand the biology behind their symptoms, which can reduce stigma by teaching that symptoms are a normal function of human biology.

In addition to teaching CRM skills to traumatized individuals, providers may also choose to use CRM skills for their own self-care and self-regulation. Working with traumatized individuals can be challenging and stressful, and at times may cause providers to suffer from psychological and physiological symptoms of secondary traumatic stress. Recent research indicates that CRM skills can improve well-being and resiliency in registered nurses while reducing physical symptoms of distress and secondary traumatic stress symptoms. Providers at SLATRC may therefore similarly benefit from personal use of CRM wellness skills.

## Limitations

CRM is a relatively new intervention and there is limited research on its efficacy Research on CRM has taken place mostly in community settings in the wake of natural disasters. There has been no research on CRM for victims of violent crime while they are still recovering from their physical injuries in the hospital. This population may experience challenges that would not arise in other settings, such as that individuals who are more severely injured may not be able to participate in some of the wellness skills until they are more fully recovered, and other skills may have to be modified. For example, some individuals may not be ambulatory, which would prevent them from getting out of bed to practice Help Now! skills such as taking a walk or pushing against a wall. Individuals can be taught about the skills for later use, and other Help Now! skills—such as noticing colors in the room or drinking a glass of water—can be used in the meanwhile. Individuals who are not ambulatory also may not be able to sit up without pain, and may need to ground by noticing the sensation of their body lying in the bed instead of the sensations of their feet making contact with the ground. It would be important for practitioners to modify the skills and the way they teach the skills as needed to suit each individual instead of using a one-size-fits-all approach.

## Recommendations and Guidelines for Implementation

This training manual is intended to teach CRM wellness skills to practitioners at or associated with SLATRC so that they can share the skills with clients. This manual is intended to be a beginning, but it is limited in its ability to teach the wellness skills in depth. SLATRC staff can learn more about CRM by attending an official CRM training hosted by the Trauma Resource Institute. More information on trainings in CRM and TRM can be found at www.traumaresourceinstitute.com. It may be possible to use funding from grants to cover CRM trainings for staff.

It is recommended that SLATRC have staff trainings to better disseminate the information contained in this manual. Staff trainings can be held in-person or virtually, although in-person trainings are preferable since they allow more opportunity to practice the CRM skills with other staff members. Although a cognitive understanding of the skills is valuable, practicing the skills with others can allow for a more embodied experience. First-hand experience of the skills can cultivate a better understanding of what it might be like for clients, and that understanding can increase one's effectiveness as a teacher. A future goal might be to create an instructional video that covers the skills. The instructional video should include breaks where the video can be paused while the skills are practiced in the room. After practicing the skills, there should be time allotted for staff members to debrief about their experiences if they feel comfortable doing so.

In addition to teaching CRM wellness skills in the hospital, SLATRC might consider teaching CRM wellness skills in individual or group therapy format. If therapists at SLATRC are trained in the Trauma Resiliency Model, this can also be used to provide longer-term somatic therapy to their clients in addition to cognitive therapies currently utilized by SLATRC. Including somatic interventions as part of the services offered by SLATRC may help SLATRC serve the community in new and exciting ways.

## Client Handouts

The following handouts are intended to be given to clients. The first two handouts contain information about concepts relevant to the Community Resilience Model, such as the Resilient zone and the 6 Wellness Skills. Handouts 3-8 are intended for practicing the 6 Wellness Skills. They can be completed with clients in the room, or they can be given to clients to practice on their own. The last handout contains local resources for clients. You may choose to summarize the material on the handouts for clients in a conversational way. It may not be necessary to give every handout to every individual. All individuals are different and have different needs. Please use your judgement to determine what would be of most benefit to your clients on a case-by-case basis.

Handouts include:
1. The Resilient zone
2. The 6 Wellness Skills
3. Skill 1: Tracking
4. Skill 2: Resource and Resource Intensification
5. Skill 3: Grounding
6. Skill 4: Gesturing
7. Skill 5: Help Now!
8. Skill 6: Shift and Stay
9. Resources

**The Resilient Zone (RZ)**

"*Every person has a Resilient Zone. When we are in our Resilient Zone, we can think clearly, handle feelings better and manage the sensations inside the body. We have the best capacity for flexibility and adaptability in mind, body and spirit.*" Elaine Miller-Karas, LCSW & Laurie Leitch, PhD

The Resilient Zone:
- is when our nervous system is in balance
- allows us to be more resilient when dealing with life challenges

Traumatic stress can threaten to overwhelm your ability to cope, making it more difficult to remain in your Resilient Zone. After trauma, you may be stuck in the high zone or the low zone. You might go back and forth between the high and low zones, or even be in both zones at once.

The High Zone:
- is the gas pedal
- is nervous system hyperarousal (high alert)
- can cause irritability, panic, anxiety, pain, and hypervigilence

The Low Zone:
- is the brake pedal
- is nervous system hypoarousal (shut-down)
- can cause numbness, disconnection from others or ourselves, sadness, depressed mood, and exhaustion

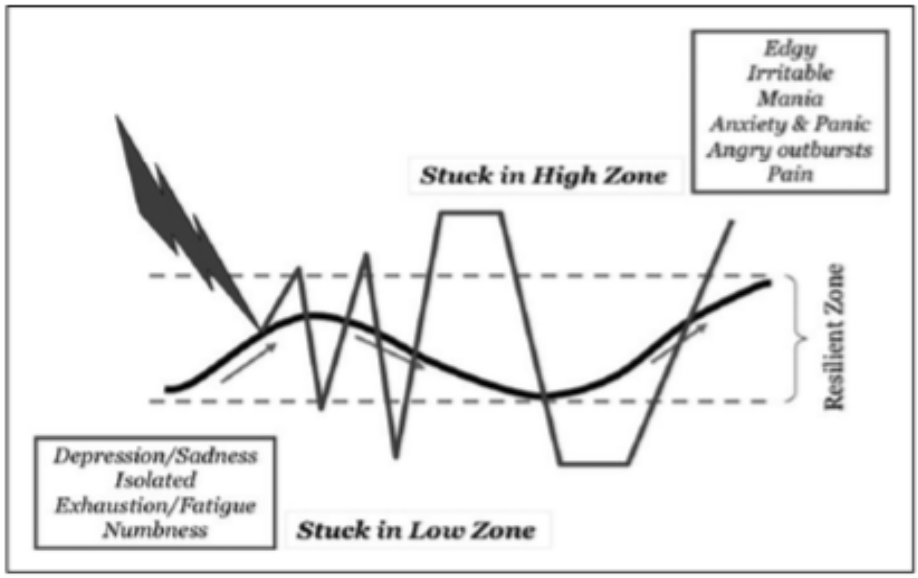


*Figure F6.* CRM Resilient Zone.

**The 6 Wellness Skills**

These skills are from the Community Resiliency Model, which is based on current research about the effects of trauma on the brain. They are intended to be used for self-care and self-regulation. You can use them on your own to help you return to your resilient zone, even when trauma and stress feel overwhelming. The 6 skills do not need to be used in order, but can be used as needed based on the situation.

1. Tracking—Paying attention to sensations within the body
2. Resourcing and Resource Intensification— Developing and expanding personal resources
3. Grounding— Bringing your body into the here-and-now
4. Gesturing—Using gestures for self-soothing
5. Help Now! —Strategies to bring down activation in nervous system when stuck in high or low zone.
   - Drink a glass of water, a cup of tea, or cup of juice.
   - Look around the room or wherever you are, paying attention to anything that catches your attention.
   - Name 6 colors you see in the room (or outside)
   - Open your eyes if they have a tendency to shut.
   - Count backwards from 10 as you walk around the room.
   - If you're inside, notice the furniture, and touch the surface of a couch or chair, noticing if it's hard, soft, or rough.
   - Notice the temperature in the room.
   - Notice the sounds within and outside the room.
   - Walk and pay attention to the movements in your arms and legs and how your feet are making contact with the ground.
   - Push your hands against the wall or door slowly and notice your muscles pushing.
6. Shift and Stay— Shifting awareness when trauma/stress-related reactions arise

## Skill 1: Tracking

Tracking is paying attention to sensations within the body. It is helpful to learn the language of sensation because that's how we "talk" to the nervous system. Tracking helps you learn how to bring balance back to your nervous system.

At first, you may only be aware of uncomfortable sensations, but there are usually places in your body that are not in distress or are in less distress. There may even be places that feel good. To get back into your Resilient Zone, it is necessary to pay attention to places of comfort in your body. This will help you put the brake on if the accelerator is stuck on high. Paying attention means you notice the sensations inside as you focus on those parts of your body that are less distressed, neutral, or positive.

If you have many symptoms because you have been bumped out of your Resilient Zone, your own body can feel like the enemy. Tracking inner sensations, even ones that are comfortable, can be difficult at first. As you get more experience in tracking, finding inner sensations of comfort will get easier and easier for you.

Let's Practice:

You are invited to take a moment to notice your body. What do you notice? Is it pleasant, unpleasant, or neutral?

You can describe the smell, sound, taste, temperature, or feeling of what you are experiencing. It may be difficult to describe body sensations at first. If you are having trouble finding the language to describe what you are noticing inside, you can use the following vocabulary:

**Shape:** Round, triangular, oval, rectangular, square
**Size:** Small, medium, large
**Looks like:** Flat, curved, bright, dark, color (what color is it?)
**Smell:** Rancid, fresh, floral, fragrant
**Volume:** Loud, soft
**Quality:** Squeak, scream, grunt, cry, laugh
**Taste:** Sweet, sour, bitter, tasteless, spicy
**Temperature:** Cool, cold, icy, lukewarm, warm, hot, neutral
**Touch:** Hard, soft, sharp, rough, pointed, furry

## Skills 2: Resourcing and Resource Intensification

Resources are anything that make you feel better. Building resources builds internal resiliency and a sense of your own abilities and capacity. This can help stabilize the nervous system.

Resource intensification is when you enhance the description of the resource, which helps strengthen the resource and pleasant/neutral sensations associated with it.

There are 3 types of resources:
1. External resources: People, places, spiritual beliefs, skills, hobbies, and pets
2. Internal Resources: Values and beliefs, positive character traits, body strengths, positive memories
3. Imagined resources: Imagine a resource and what life would be like if the resource existed. This can include imaginary places, fictional characters, etc.

Let's Practice:

Write down 3 resources:
1.
2.
3.

Circle one resource.

Write down three or more details about your resource that you circled.
1.
2.
3.

Now read to yourself the resource and the three details you have written down about your resource.

**Notice** what is happening inside as you think about the resource and notice the sensations that are pleasant or neutral.
**Notice** what is happening to your breath, heart rate, muscle tension.
**Bring** awareness to the changes that are pleasant or neutral.
**Stay** with that for a few minutes.

Write down the sensations that you notice on the inside that are pleasant or neutral associated with a resource.
1.
2.
3.

## Skill 3: Grounding

When you've been through trauma, triggers can make you feel like you are in the past, when the trauma was still happening. Grounding helps you bring your body into the here-and-now by noticing how your body or a part of your body is making contact with a surface. This helps remind your body that it's safe.

You can ground sitting down, lying down, or standing. You can also bring awareness to hands/feet by making contact with a surface or floating in the ocean.

Let's Practice:

First, find a comfortable position sitting, lying down, or standing.

**Notice** how your back is making contact with the chair, sofa, floor, bed, earth.
If sitting, bring your attention to your seat making contact with the chair.
**Notice** your thighs, legs, and then your feet making contact with a solid surface.
**Notice** sensations that are more pleasant to you or neutral within your body
…. Take your time.
**Notice** your breathing, heart rate, your muscles relaxing.
If you become aware of uncomfortable sensations, bring your attention to places that feel neutral or more comfortable.

Take a few moments to bring your awareness to sensations that are pleasant/neutral.

As we get ready to end, slowly scan your body and bring your attention to all sensations that are pleasant or neutral.

Write down three sensations you noticed that are pleasant or neutral when grounding:
1.
2.
3.

## Skill 4: Gesturing

People all over the world make gestures while they talk. Gestures often emerge spontaneously and may have special meaning that accompanies what we're saying with our words. We can use gestures for self-soothing and self-regulation.

Types of gestures:
- Self-calming—brings comfort and safety (i.e. hand over heart, hugging self)
- Gestures of release—represents the feeling of something distressing leaving the body (i.e. shaking out arms)
- Universal movements—represents wholeness, spiritual beliefs, or deep personal meaning (i.e. hands pressed together in prayer)
- Protective Movements—increases feelings of safety against threat (i.e. fetal position, pushing away motion with hands)

Let's Practice:

Take three seconds to think about a self-soothing gesture.
Count 1, 2, 3, and then make the gesture.
As you do your gesture of self-soothing, notice what happens inside.
Take three seconds to think about a gesture of confidence, count 1, 2, 3, and then make the gesture.
As you do your gesture of confidence, notice what happens inside.
Take three seconds to think about a gesture of joy.
Count 1, 2, 3, and then make the gesture.
As you do your gesture of joy, notice what happens inside

Write down three sensations you noticed that are pleasant or neutral when gesturing:
1.
2.
3.

**Skill 5: Help Now!**

Help Now! Skills are specific strategies to bring down activation in your nervous system when stuck in the high or low zone. It helps you focus on something else besides distress and sensations of being overwhelmed. Not all of the strategies will help each person. Experiment and use which ones work best for you.

- Drink a glass of water, a cup of tea, or cup of juice.
- Look around the room or wherever you are, paying attention to anything that catches your attention.
- Name 6 colors you see in the room (or outside)
- Open your eyes if they have a tendency to shut.
- Count backwards from 10 as you walk around the room.
- If you're inside, notice the furniture, and touch the surface of a couch or chair, noticing if it's hard, soft, or rough.
- Notice the temperature in the room.
- Notice the sounds within and outside the room.
- Walk and pay attention to the movements in your arms and legs and how your feet are making contact with the ground.
- Push your hands against the wall or door slowly and notice your muscles pushing.

Let's Practice:

Has there been a time in your life when you needed the Help Now! strategies?

_____

Is there a way you can remind yourself to use the strategies when you are out of your resilient zone?

_____

If you are in situation where it may not occur to you to use the Help Now strategies, to whom can you give the Help Now information in order to help you when you get bumped out of your resilient zone?

_____

Which of the Help Now! Strategies work best for you?

_____

**Skill 6: Shift and Stay**

Use this skill if you get bumped out of your Resilient Zone as you go about your daily life. Shift and Stay means shifting your attention from something unpleasant or distressing that an include thoughts, feelings, or sensations to a place in your body that is neutral or pleasant and staying with those sensations. You can shift your attention to a place inside that feels calmer or more neutral, a resource, grounding to bring your attention to the present moment, or a gesture that is self-soothing. Then, you can stay with those sensations until you feel more stable.

Let's Practice:

First, think about a recurring, slightly annoying event. Start with something that is only MINIMALLY distressing for now, since we're still practicing.

Then, bring your attention to a place in your body that is neutral, calmer, or has less unpleasant sensations….
OR notice how your body is making contact with the chair, sofa, floor, or bed and ground
OR remember one of your internal or external resources, describing it to yourself
OR remember a self-soothing non-harming gesture
OR remember one of the Help Now! strategies.

**Notice** what happens on the inside as you try one of the options. Bring your attention away from the distress to the sensations that are calmer, more comfortable, or neutral.

….Take your time.

Notice the changes in your heart rate, breathing, and muscle relaxation. As you bring the shift and stay exercise to a close, slowly scan your body from head to toe, noticing positive or neutral changes. Stay with that for a few moments.

What did you notice when doing this exercise?

_____

Were you able to stay with the pleasant/neutral sensations?

_____

What pleasant/neutral sensations did you notice when you shifted your attention?

_____

# Resources

## Emergency/Crisis Resources

- English Lifeline Suicide Prevention Number: 1-800-273-8255
  Press “1” for Veterans Crisis Line
- Spanish Lifeline Suicide Prevention Number: 1-888-628-9454
- Suicide Prevention Chat Service: https://suicidepreventionlifeline.org/chat/
- Crisis text line: Text “HOME” to 741741
- National Hopeline Network: 1-800-784-2433
- Orange County Crisis Hotline: 714-639-4673
- Los Angeles County Dept. of Mental Health 24/7 Mental Health Access Hotline
  1-800-854-7771

## Sexual Assault and Abuse Lines

- East LA Rape and Battering Hotline
  800-585-6231
- Rape, Abuse, and Incest National Network (RAINN)
  1-800-656-4673

## Other Helpful Phone #s

- LA County 211: Free number for information on local resources

## Apps

- www.ichillapp.com
  A free app that will help you practice Community Resiliency Model wellness skills.

## Southern California Crossroads-TRC

- Address: 3680 E. Imperial Hwy Suite 405 Lynwood CA, 90262
- TRC’s website: https://www.socalcrossroads.org/trauma-recovery-center
- TRC’s phone number: 424-785-5157

## Therapy/Counseling Resources in the Community

- Monica Levine, M.A., MFT
  16987 Alonquin, Suite L
  Huntington Beach, CA 92649

562-340-7590

- "The Traveling Therapist"
  Luvonne G. Richardson King, MSW, LCSW
  213-503-7590

- G.R.I.E.F. Counseling Center
  Christian-based, in-home counseling available
  9800 S LA Cienega Blvd, Suite 200
  Inglewood, CA 90301
  Deyana Blacksher 310-293-8105
  Deborah A. Lowe 323-789-0545

- Daniel Trejo
  All throughout Los Angeles County
  English/Spanish
  In-home counseling available
  562-201-8694

- Co-Padres Psychotherapeutic Services
  Sandra A. Barela, LMFT
  4600 E Carson Plaza Dr, #215
  Carson, CA 90746
  English/Spanish
  In-home counseling available
  310-853-6951 Toll Free 877-7COPADRES

- Child/Adolescent Psychiatry Clinic Harbor-UCLA Medical Center
  P.O. Box 498
  1000 W Carson Street
  Torrance, CA 90509
  310-222-3110

- CJ Whitaker, LMFT & Associates
  In-home counseling
  310-621-9493

- Compton Mental Health
  921 E. Compton Blvd
  Compton, CA 90221
  310-668-6800

- The Guidance Center Compton Systems of Care
  901 W Victoria St, Suite 901F
  Compton, CA 90220
  310-669-9510

- Gardena Human Services
  Counseling, emergency assist, food pantry, job training programs, family childcare (requires ID and proof of address in city of Gardena)

1651 W. 162nd street
Gardena, CA 90247
310-375-3526

- Trauma Resource Center
  In-home counseling
  Referrals to low income housing partners, shelters, transportation to hospitals and doctors appointments, case management, psychiatrist available.
  Drop-in Center Hours Monday-Friday 10am-5pm
  5849 Crocker Street
  Los Angeles, CA 90003
  323-432-4399 Ext 210

- Loved Ones Victim Services
  Provides grief counseling for individuals who have lost loved ones as a result of violence. Provides individual, family, and group counseling for adults, teens, and children. Provides professional support services, educational resources, and information/resources about other associated services.
  5701 W Slauson Ave Suite 116
  Culver City, CA 90230
  310-337-7006

- Pacific Psychological Associates
  2221 Rosecrans Ave Suite 211
  El Segundo, A 90245
  310-536-0211

- Cryssol Marquez, M.s. MFTI, MA Ed.
  Beyond Your Beliefs
  Office Manager/Mental Health Specialist
  323-253-7520

- Aiming Forward Counseling Services Inc.
  Enelida Alvarez, MSW, LCSW, ACT
  460 E. Carson Plaza Dr, Suite 120
  Carson, CA 90746
  310-800-3526

- Robert Sundance Family Wellness Center
  Serves Children, Adolescents, and families in L.A. County.
  Free services to American Indians enrolled in their tribe.
  7th Generation Dept.
  1125 W. 6th Street, Suite 103
  Los Angeles, CA 90017
  213-241-0979
  213-975-9255 Fax
  M-F 9am-6pm

- Zachary Ray, Regional Director
  Torres Martinez Tribal TANF

Not a clinic, in-home services only
Services L.A. County and Riverside County
323-313-1300 Office

- A Home for Us
  Confidential Counseling for crime survivors
  In-home counseling available
  Adrianne M Moore, LMFT
  866-566-7143

- The Reverence Project
  Specializes in holistic healing
  1673 E. 108th Street, Los Angeles, CA 90059
  323-527-2285
  Mobile # 323-602-3292

- Westmont Counseling Center
  1704 W. Manchester Ave.
  Suite 202A
  Los Angeles, CA 90047
  424-312-2311

- Rape Treatment Center
  Santa Monica
  310-319-4900 EXT 0

- Men's Recovery Home
  No insurance needed
  626-986-4109

**Legal Services**

- Legal Aid Foundation of Los Angeles
  1102 S. Crenshaw Blvd
  Free legal service and emotional support, family law & domestic violence
  Los Angeles, CA 90019
  323-801-7991

**Food Banks**

- World Harvest Charities and Family Services
  3100 Venice Blvd
  Los Angeles, CA 90019
  Email: info@worldharvestfoodbank.org
  Phone: 213-746-2227

**Funeral Homes**

- Rosencrans Funeral Home
  8545 E. Rosencrans Ave

Paramount, CA 90723
562-634-8900
FAX: 562-634-8008
Bilingual
Other locations in LA, Inland Empire and East LA

- Continental Funeral Home
  5363 E. Beverly Blvd
  Los Angeles, CA 90022
  323-728-6222
  Bilingual
  Other locations in Hawthorne, Ontario, and Santa Ana

- All Souls Cemetery Mortuary
  Many Locations
  562-424-8601

- Harrison-Ross Mortuary
  4601 Crenshaw Blvd
  Los Angeles, CA 90043
  323-5584-1230

- South Los Angeles Mortuary
  1020 W 99th Street
  Los Angeles, CA 9044
  323-757-3173

- Simpsons Family Mortuary
  5138 S. Broadway
  Los Angeles, CA 90037
  323-231-9337

**Homelessness Resources**

- Shelter Hotline
  800-548-6047

- 24 Hr Referrals and Crisis Intervention
  310-669-5933
  Call for list of shelters, food, clothing, etc.

- Missionary Charity Women
  10950 California Ave Lynwood
  310-635-3264
  Call 9-11 AM M-Sat
  Preg Women Only. ID Req. Stay up to baby reaches 1 month.

- Compton Welfare
  528 West Almond St. Compton, CA 90220
  310-631-5193

Call 1st. 10 AM M-F
Women & Women with children. 90 day stay. ID, Income, and documentation required.

- Mental Health America/The Village
  456 Elm Ave Long Beach, CA
  562-437-6717
  Shelter for women. 8-12 M-F. No ID Req.

- Doors of Hope Women's Shelter
  599 Broad Ave Wilmington, CA 90744
  310-518-3667
  Intake 9 AM-12PM. M-Sat
  Except Wed: 10 AM-12 PM

- Beacon of Light Mission
  525 Broad Ave Wilmington, CA 90744
  310-830-7063
  9 AM Daily
  Emergency shelter. Men only. ID optional.

- Long Beach Rescue Mission/Samaritan House
  1335 Pacific Avenue Long Beach, CA 90813
  562-591-1292
  Intake at 3:15pm Daily

- Path Shelter-Transitional Housing
  Wheelchair Access
  340 N. Madison Ave L.A., CA 90004
  323-644-220
  Walk-in M-F 7:30-4
  Men with no children. Shelter for single women with children. Must be able to work.

- Friends Helping Friends LA Transitional Housing
  3701 Cherrywood Ave L.A., CA 90018
  323-293-9778
  Int. M-F 10-12 ID optional. $500 mo.

- Pentecostal Outreach—Shelter & Transitional Housing
  663 W. 10th San Pedro, CA 90731
  310-831-0589
  M-Sat 10 AM-4 PM
  1st Interview No ID. 2nd Interview ID required.
  For families, men with children ok. No fee, but income is required. At least 1 child.

- The House that Watts Built--Transitional Housing
  $500
  11303 Avalon Blvc L.A., 90061
  323-455-0897
  562-469-8513 Michelle Carter

- Jordan's Transitional Housing
  1616 E. Pine St. Compton, CA 90221
  323-577-5941
  Intake M-W 1-4 PM Referral ONLY
  $500 per month. Stay up to a year. Women with children.

- Rio Hondo Transitional Housing
  12300 4th St. B213 Norwalk, CA 90650
  562-863-8805
  Families

- Bible Tabernacle
  1761 Washington Way, Venice
  310-821-6116
  M-F 8 AM -1:30 PM Sat 8 AM-12 PM
  Adults and children. No ID.

- Harbor View House
  921 S. Beacon St. San Pedro, CA
  310-547-3341

- Russ Hotel
  517 S. San Julian St. L.A., CA 90013
  213-229-9655
  Walk in to lobby M-F 9-11 AM
  Or call 213-620-7146.
  ID Req or Preferred. Free.

- Union Station Shelter
  825 E. Orange Grove Blvc Pasadena, CA
  626-240-4550
  TB clearance, proof of income.

- Panama Hotel
  403 E. 5th St. L.A.
  213-229-9657
  Walk in to Russ Hotel Lobby M-F 9-11 AM
  or call 213-620-7146
  ID Req or Preferred. Free. Up to 30 days.

- Pathways Home Shelter
  3804 S. Broadway L.A., CA
  323-231-1711
  Alternate #: 323-410-0372
  For women: 213-529-0926
  Intake Tue & Thur 1-4 PM
  Single men and women. Pregnant women up to the 4th month are accepted. 90 day stay. ID Optional.

- SHARP Oasis House
  5201 S. Vermont L.A., CA
  323-751-2677
  Walk-in 8 AM-2PM M-F
  ID Req. Refers to shelters.

- National Transitional Center
  8935 S. Broadway L.A., CA 90003
  323-455-0908
  323-686-3686 Yvonne Barron
  $600 (3 meals included)

- Lydia's Home
  1430 Pacific Ave L.B.
  5620591-1292
  562-570-4900
  Sign up 5pm. 90 Day stay. Single men and women with children. No ID required.

- His Nesting Place
  350 E. Market St. Long Beach 90805
  562-422-2137
  No ID required. M-F 9-2. Women with children (males up to 10 years). 6 month stay.

- Salvation Army
  5600 Rickenbacker Rd #2a2B Bell, CA 90201
  323-263-1206 Ext 223 or 224.
  2158 Pacific Ave L.B. CA 90813
  562-591-2830
  Intake time: 9am-11:30am
  Single men and women. First 30 days are free. M-F ID & Drug Test. Stay up to a yr. Call ahead @ 9am.

- Casa de los Angelitos
  954 Koleeta Dr. Harbor City 90710
  310-325-8208
  Home for single pregnant women 18+. Call for app. ID req & proof pregnancy. $150 monthly.

- Union Rescue Mission
  545 S. San Pedro St. L.A. 90013
  213-347-6300
  Sign up: 5pm
  Days Open: Mon-Sun
  Mostly men, but some beds available for women and children.

- Emmanuel Baptist
  530 E. 5$^{th}$ St. L.A. 90013
  213-626-4681
  Sign-Up: 8:30 AM M-Sat
  Men Only. No ID req.

- Los Angeles Mission
  303 E. 5th St. L.A. 90013
  213-629-1227
  Sign-Up: 7-8AM
  Days Open: Mon-Sun
  Men Only

- Jovenes, Inc./La Posada
  1208 Pleasant Ave L.A., CA 90033
  323-260-8035
  Intake 9-5 or call before.
  No ID Req.
  Men 18-24 yrs. Can stay up to 90 days.

- Beyond Shelter
  1200 Wilshire Blvd, Ste 600, L.A., CA 90017
  213-252-0772
  Crisis Intervention & Short-Term Stabilization, Screening, Intake and Needs Assessment, Provision of Housing Resources.

- Good Shephard Center
  267 N. Belmont Ave. L.A.
  213-250-5241
  Tue-Thur 9:45 AM
  Single women (no children), must be able to work. 90 day stay. ID Req.

- Catholic Charities
  4665 Willow Brook Ave. 1st Floor L.A., CA 90029
  562-591-1351
  Food, Shelter, Advocacy. List of shelters. Information.

- Midnight Mission
  601 S. San Pedro St. L.A. 90014
  213-624-9258 Ext. 1615
  Large housing program for men. Provides programming and job search assistance for substance abusers. They also have a family housing program in Inglewood.
  http://www.midnightmission.org
  7 AM M-F No ID
  Wheelchair-7 AM

- Weingart S.R.S. Program
  566 South San Pedro St. L.A. 90013
  213-627-9000
  213-833-5020
  Sign-Up: 8 AM-2 PM
  Days Open: Mon-Fri
  ID Req. Proof of Income. Recent TB test. Stay time varies.

- Long Beach Multipurpose Center
  1301 W. 12th St. Long Beach, CA 90802

123 E 14th St. Long Beach, CA
562-570-4500
Assists with case mgmt.., shelters, referrals, etc.
M, T, W, F: 8 AM-5 PM
Th: 8 AM-2 PM

- Homeless Assistance Program
  456 Elm Ave. Long Beach, CA 90802
  562-437-6717

- LAMP Frank Rice Access Center
  627 St. Julian L.A., CA
  213-488-0031
  8-12 AM M-F
  No ID. 90 Days.

- Lamp Community
  526 San Pedro St. L.A. 90013
  213-488-9559
  showers, laundry, etc.

- Homeless Outreach/HOPICS
  5715 S. Broadway L.A., CA 90037
  323-948-0444
  323-541-0786
  Access center for emergency intake, placement into shelter, transitional housing, and permanent housing referrals. Grooming & Personal Care. Walk-ins accepted.

- Watts Labor Community Action Center (WLCAC)
  958 E. 108th St/ Central L.A., CA
  323-563-4730
  Homeless access center for emergency shelter.
  Walk-in intakes M-F 8:30 AM-3:30PM.

- Lutheran Social Services
  1611 Pine Ave Long Beach, CA
  562-599-1321
  Referrals, food, blankets, hygiene, etc.

**Hospice Shelter and Palliative Care**

- Angeles Vista Hospice
  310-728-2529
  www.angelesvistahospice.com

**To Find a Board and Care in Los Angeles County**

- Community Care Licensing Greater Los Angeles Regional Office
  323-980-4934

- North Los Angeles and Central Coast Regional Office
  818-596-4334