2016

A clinician's guide to working with female veterans and their children

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Pepperdine University

Graduate School of Education and Psychology

A CLINICAN'S GUIDE TO WORKING WITH FEMALE VETERANS AND THEIR
CHILDREN

A clinical dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Psychology in Clinical Psychology

by

Deniz (Mustafoglu) Ahmadinia

September, 2016

Louis Cozolino, Ph.D. – Dissertation Chairperson

This clinical dissertation, written by

Deniz (Mustafoglu) Ahmadinia

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:

Louis Cozolino, Ph.D., Chairperson

Michelle Margules, Psy.D.

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DEDICATION

"A hero is an ordinary individual who finds the strength to persevere and endure in spite of overwhelming obstacles."

This dissertation is lovingly dedicated to my mother, Debbie Mustafoglu. You are the strongest and most courageous survivor I know. Thank you for showing me unconditional love, for protecting me, inspiring me, and teaching me to be kind and loving towards others. You are my hero.

ACKNOWLEDGEMENTS

VITA

Deniz (Mustafoglu) Ahmadinia, M.M.F.T.

EDUCATION

Pepperdine University (APA Accredited)   2016
Doctor of Clinical Psychology
Dissertation Title: A Clinician's Guide to Working with Female Veterans and their Children
Chairperson: Louis Cozolino, Ph.D.
Competency Exam: Pass with Distinction

University of Southern California   2011
Master's of Marriage and Family Therapy – M.M.F.T
Thesis Title: Maternal Depression and its Impact on Child Behavioral Outcomes
Chairperson: Ruth Chung, Ph.D.

Pepperdine University   2009
Bachelor of Arts in Psychology
Minor in Social Work

CERTIFICATIONS

Trauma Focused Cognitive Behavioral Therapy (2011)- *National Crime Victims Research and Treatment Center*

CLINICAL EXPERIENCE

VA Sepulveda Ambulatory Care Center, North Hills, CA   **August 2015- July 2016**
Pre-doctoral Psychology Intern
Mental Health Recovery and Intensive Treatment (MHRIT; August 2015 – January 2016)
Provide recovery and evidence-based treatment for Veterans with a variety of diagnoses, such as PTSD, depression, anxiety, substance abuse, serious mental illness, and personality disorders.
Supervisors: Shana Spangler, Psy.D., Alex Barrad, Psy.D., and Sarah Duman, Ph.D.
  • Facilitate Cognitive Processing Therapy (CPT), Cognitive Behavioral Therapy (CBT) for Depression, Emotions Management, and Introduction to Contemplative Practices Groups
  • Provide individual CPT and Prolonged Exposure (PE) to veterans with PTSD
  • Administer Clinician Administered PTSD Scale (CAPS) and write diagnostic summary to provide diagnostic clarification and treatment recommendations
  • Complete weekly mental health assessments and treatment plans with a focus on recovery-oriented goals
  • Attend weekly team meetings to coordinate treatment and case management
  • Attend weekly individual and group supervision, which includes review of session audio recording

Addictive Behaviors Clinic (ABC; January 2016 – May 2016)
Work within an interprofessional team to provide clinical services to Veterans with substance use disorders and other psychological diagnoses in a 16-week, intensive outpatient program.
Supervisor: Melissa Lewis, Ph.D. and Alex Barrad, Psy.D.
- Facilitate groups, including Matrix Early Recovery/Relapse Prevention, Emotions Management, Mindfulness-Based Relapse Prevention, and a process group for aftercare veterans
- Provide weekly individual psychotherapy for dually-diagnosed veterans
- Conduct intake evaluations including Mental Health Initial Assessments and Brief Addiction Monitors (BAMs) with patients enrolling in ABC
- Provide consultation/liaison services and triage with staff
- Attend weekly team meetings to coordinate treatment and case management

Women's Health Clinic (WHC; April 2016- August 2016)
Provide psychological services as a member of an interprofessional treatment team to women Veterans presenting with mood disorders, anxiety disorders, PTSD, substance abuse, and personality disorders.
Supervisor: Melissa Lewis, Ph.D. & Erin Joyce, Psy.D.
- Facilitate weekly groups, including CPT, Understanding the Effects of Trauma, Emotions Management, and CBT-based Coping with Anxiety and Depression
- Conduct intake evaluations including Mental Health Initial Assessments
- Provide individual therapy to women Veterans
- Attend monthly Women's Health Interprofessional Staff Meeting and monthly Women's Health Mental Health Case Conference with psychiatric clinic staff to coordinate care

Anxiety Disorders Clinic (October 2015 – April 2016)
Supervisor: Sarah Duman, Ph.D. and Calvin Yang, M.D.
- Participate in a six-month elective, which includes weekly didactics, training, and supervision on treating various anxiety disorders utilizing Cognitive Behavioral Therapy (CBT), Exposure and Response Prevention (ERP), Biofeedback, and relaxation training
- Elective includes collaboration with psychiatry staff and residents for medication management.

Acceptance and Commitment Therapy Seminar (August 2015 – August 2016)
Supervisor: Charles DeLeeuw, Ph.D.
- Participate in year-long training seminar which includes lecture, training, application, in the provision of Acceptance and Commitment Therapy (ACT) for depression, anxiety and PTSD
- Observe live sessions of ACT and review session recordings in supervision

Evidence-Based Practices Seminar I and II (August 2015 – August 2016)
Supervisor: Alex Barrad, Psy.D, Melissa Lewis, Ph.D., and Shana Spangler, Psy.D.,
- Participate in year-long training seminars which include lecture, training, application, and supervision in the treatment of PTSD using CPT and PE

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Couples and Family Seminar (August 2015 – August 2016)
Supervisor: Falguni Chauhan, Ph.D
- Partake in year-long seminar that includes lecture, training and application in the provision of Integrative Behavioral Couple Therapy (IBCT)
- Perform couples therapy behind a one-way mirror and receive supervision and team feedback

Long Beach Veteran's Healthcare Center, Long Beach, CA   **August 2014- July 2015**
Psychology Pre-Intern
Supervisors: Hana Shin, Ph.D. and Gretchen Sholty, Ph.D.
- Participated in two six-month rotations in the Behavioral Health Interdisciplinary Program and Women's Mental Health and PTSD Program
- Provided short-term individual and couple's psychotherapy for Veterans presenting with PTSD, mood disorders, personality disorders, and substance abuse
- Co-facilitated groups including, CPT, Combat Support, Social Phobia, DBT Skills, and ACT
- Attended weekly individual and group supervision, which included case presentation and review of session audio recordings
- Attended weekly team meetings to coordinate treatment with interdisciplinary team

Memory Care, **UCLA Longevity Center** Los Angeles, CA   **September 2013 - June 2014**
Psychology Extern
Supervisor: Karen Miller, Ph.D.
- Participated in weekly three-hour cognitive rehabilitation program that provided education, training and support for individuals and caregivers with Alzheimer's Disease, major and mild neurocognitive disorders
- Assisted in hour-long memory training utilizing practical techniques to enhance memory performance
- Aided in providing hour-long mind-body exercises, including mindfulness, yoga, tai chi, art, and music therapy
- Attended weekly group supervision

Pepperdine Community Counseling Center, Encino, CA   **September 2012 - July 2015**
Psy.D. Trainee
Supervisor: Anat Cohen, Ph.D. and Michelle Margules, Psy.D.
- Provided psychotherapy to adults, children, adolescents, couples, and families presenting with mood, trauma, anxiety, substance abuse, personality disorders and acculturation difficulties
- Participated in non-profit organization, *Children of the Night,* by providing individual psychotherapy to adolescent girls involved in sex-trafficking and sexual exploitation (ages 11-18)
- Implemented and co-facilitated evidence-based Mindful Parenting group at Portola Middle School
- Conducted intake interviews and developed treatment goals with clients
- Administered, scored, and interpreted periodic measures of progress including the

Outcome Questionnaire (OQ-45.2), Youth Outcome Questionnaire (YOQ; Parent and Youth Self-Report), and Working Alliance Inventory-Short Version (WAI-S)
- Attended weekly individual and group supervision, which included case presentation and review of session recordings

Marcia Teichman Psychotherapy, Beverly Hills, CA   **February 2011 - July 2013**
MFT Intern
Supervisor: Marcia Teichman, L.M.F.T.
- Provided individual, couples, and family therapy to diverse population with a focus on trauma/abuse, mindfulness-based therapy, and acculturation issues
- Treated Bipolar Disorder, Social Anxiety Disorder, Borderline Personality Disorder, Narcissistic Personality Disorder, and Major Depressive Disorder
- Facilitated eight-week Teen Mindfulness Group
- Participated in weekly individual supervision

Southern California Counseling Center, Los Angeles, CA   **August 2010 - August 2012**
Counselor
Supervisors: Marcia Teichman, M.A., M.F.T.; Charlotte Spiegelman, L.C.S.W.
- Provided individual, couples, and family therapy to a low-income, diverse population presenting with issues of trauma, suicidality, depression, anxiety, relational, and behavioral issues
- Participated in an eight-month Advanced Family Training Program focusing on Family Systems Therapy, Narrative Therapy, Solution-Focused Therapy, and Emotion Focused Therapy
- Participated in the School-Based Program to provide therapy in LAUSD middle and elementary schools, while receiving training in play therapy, art therapy, bullying, and suicide prevention
- Performed individual and couples therapy behind a one-way mirror and received supervision and team feedback
- Participated in Narrative Therapy reflection teams
- Conducted individual, couple, and family intakes on a weekly basis

Dangerfield Institute of Urban Problems, Los Angeles, CA   **June 2010 - June 2011**
MFT Trainee
Supervisor: Wendy Suer, L.C.S.W.
- Conducted individual therapy sessions at the group home with teens in the foster care system
- Co-facilitated group therapy sessions designed to increase self-awareness and provide psycho-education on topics, such as safe sex and substance abuse
- Utilized CBT and art therapy to treat Post-Traumatic Stress Disorder, Bipolar Disorder, Major Depressive Disorder and self-harm behavior
- Consulted with clinical social workers, wraparound team, and staff to provide case management
- Completed Needs and Services Plans to communicate progress and treatment goals to DCFS

ASSESSMENT EXPERIENCE

VA Sepulveda Ambulatory Care Center, North Hills, CA   **August 2015- July 2016**
Psychology Intern *Neuropsychology Clinic (August 2015 – August 2016)*
Supervisor: Alexis Kulick, Ph.D., ABPP/CN
- Administer and score comprehensive neuropsychological and psychodiagnostic evaluations, write integrative reports, generate individualized recommendations, and conduct feedback sessions with patients and their families to communicate the results of the evaluations
- Participate in seminar on neuroanatomy, brain-behavior relationships, understanding and treating neurobehavioral disorders (i.e. head trauma, stroke, dementia, seizures, etc.), differentiation between organic and functional disorders, and the etiology and prognosis of the disorders studied

UCLA Mary S. Easton Center for Alzheimer's Disease Research, Los Angeles, CA
Neuropsychology Extern   **August 2013- August 2014**
Supervisor: Ellen Woo, Ph.D. and Kathleen Tingus, Ph.D.
- Conducted individual intake interviews with an adult population presenting with traumatic brain injury, dementia, learning disabilities, ADHD, language disorders, brain tumors, and other medical/forensic issues
- Administered, scored, interpreted, and wrote one full-length, comprehensive neuropsychological assessment report per week
- Participated in weekly individual and group supervision
- Completed weekly case presentation in group supervision to discuss case conceptualizations, differential diagnoses, and cultural considerations
- Attended weekly neuropsychology didactics and seminars
Administration Experience:
- Auditory Consonant Trigrams, BAI, BDI-II, Bender-Gestalt-II, Boston Naming Test, COWAT, CVLT-II, D-KEFS, Dot Counting Test, Finger Tapping Test, GDS, Grooved Pegboard, Judgment of Line Orientation, Life Events Checklist, MCMI-III, M.I.N.I., MMPI-2, MMSE, NEO-PI-R, PCL-5, RAVLT, Rey-15 Recognition Test, Rey Complex Figure Test (RCFT), RISB, Rorschach Ink Blot Test, Stroop, TAT, Test of Memory Malingering (TOMM), Test of Nonverbal Intelligence (TONI), TOPF, Trails A & B, VMI-6, WAIS-IV, WCST, WISC-IV, WMS-IV, WRAT-IV, WTAR

SUPERVISORY EXPERIENCE

Pepperdine Community Counseling Center, Encino, CA   **September 2014 - July 2015**
Clinical Peer Supervisor
Supervisor: Anat Cohen, Ph.D.
- Selected by the Director of Clinical Training to provide mentorship for first- and second-year doctoral trainee therapists
- Assisted supervisees with developing and articulating clear training goals for the year regarding diagnosis, treatment, case conceptualization, and therapeutic interventions
- Met with supervisees for weekly one-hour supervision sessions to review videotaped

therapy sessions and provide feedback on clinical case management, crisis situations, and legal/ethical dilemmas
- Reviewed written documentation from supervisees, including intake reports and progress notes, in order to provide feedback on writing skills, conceptualization of client's presenting problems, and diagnosis
- Conducted regular chart audits of peer supervisees' client records, including intake summaries, progress notes, and treatment summaries in order to ensure proper documentation of treatment interventions
- Attended weekly group supervision focused on development of supervisory skills and addressing challenges

RESEARCH AND SCHOLARSHIPS

Pepperdine University   **January 2014 - July 2015**
Research Assistant
Supervisors: Edward Shafranske, Ph.D. and Carol Falander, Ph.D.
- Provided research support for upcoming publication of book focusing on clinical supervision and training in the field of psychology
- Conducted and organize literature reviews to compile information on designated subtopics
- Maintained master reference list in order to ensure proper APA formatting style and inclusion of all necessary references
- Created APA formatted data tables and figures based on research data on adult friendships

Pepperdine University   **August 2013 - Present**
Doctoral Dissertation
Dissertation Chair: Louis Cozolino, Ph.D.
Title: *A Clinician's Guide to Working with Female Veterans and their Children*
- Completed comprehensive review of interpersonal neurobiology, PTSD, and attachment literature
- Compiled literature from searches into a formal literature review to present relevant findings and identify future areas of research
- Identify salient obstacles to returning female veterans and their children in order to provide clinicians with a comprehensive overview of the unique deployment-related stressors of female veterans, and their impact on mental health and reintegration
- Integrate principles of attachment-based interventions as the foundation to provide practical tools to guide clinicians in aiding female veterans to prepare their children for deployment, cope with deployment, and reestablish the attachment bond upon returning home

Poster Presentations

Mustafoglu, D., Buckmaster, R., & Bauer, L. (2009). The Effects of Sibling Dyads On Self-esteem, Leadership, *and Intimacy, Western Psychological Association Conference.*

Publications

Ahmadinia, **D.** & Barner, C. (in press). Alzheimer's and other dementias. In Nathan Jishin Michon and Daniel Clarkson Fisher, Buddhist leaders guidebook (pp. TBD). Hacienda Heights, CA: Buddha's Light Publishing.

PROFESSIONAL PRESENTATIONS & OUTREACH

Guest Lecturer

Mustafoglu, D. & Missler, D. (February, 2015). Stand Up To Bullying: The Anti-Bullying Campaign. Lecture conducted at at Portola Middle School, Tarzana, CA

Mustafoglu, D. (2014, November) Mindfulness and Stress Reduction for College Students. *SW 200: Introduction to Social Work*. Lecture conducted at Pepperdine University, Malibu, CA.

Mustafoglu, D. (2014, June). Surviving or Thriving: Mindfulness and Stress Reduction. *Women Empowered.* Lecture conducted in Malibu, CA.

Mustafoglu, D., Barner, C., & Perales, P. (2014, April). Interpersonal Neurobiology and Attachment. *PSY 695: Comprehensive Review*. Lecture conducted at Pepperdine University.

Mustafoglu, D. (2014, April). Professional Development for Marriage and Family Therapy Students. *Rossier Master's Program Office*. Lecture conducted at University of Southern California.

Mustafoglu, D. & Jackson, M. (2014, March). Anti-Bullying: Practical Tips for Children. *Pepperdine University*. Lecture conducted at Lanai Road Elementary School, Encino, CA.

Mustafoglu, D. & Evans, J. (2014, February). Dementia case presentation: The impact of neurosyphilis and kidney disease on neuropsychological testing. *Neuropsychiatric Institute Case Conference.* Lecture conducted at University of California Los Angeles, Los Angeles, CA.

Mustafoglu, D. & Varvaryan, A. (2014, February). Childhood Anxiety and Parenting Tips. *Pepperdine University*. Lecture conducted at Lanai Road Elementary School, Encino, CA.

Mustafoglu, D. & Miller, K.J. (2013, December). Reminiscence Therapy: Reviewing you past to embrace your future. *Memory Care.* Lecture conducted at University of California Los Angeles, Los Angeles, CA.

Mustafoglu, D., Ford, L., Mangassarian, S. (2013, February). Job Series Part III: Networking 101 Workshop. *Rossier Master's Program Office*. Lecture conducted at University of Southern California.

Mustafoglu, D. & Barner, C., (2013, February). Childhood Anxiety and Parenting Tips.

Pepperdine University. Lecture conducted at Lanai Road Elementary School, Encino, CA.

Mustafoglu, D. (2012, May) Mindful Living: Research and Practice for College Students. *SW 200: Introduction to Social Work*. Lecture conducted at Pepperdine University, Malibu, CA.

AWARDS

Pepperdine University, Clinical Competency Exam, Pass with Distinction, June 2014.

OTHER RELATED EXPERIENCE

Tutoring Program Coordinator   **2008 - 2009**
St. Joseph's Center, Venice, CA
- Conducted case management with low-income families while providing resources on affordable housing, employment, and children's programs
- Conducted pre-test and post-test tutoring evaluations to establish goals and monitor educational progress
- Utilized computer knowledge to assist in computer training courses
- Designed a youth program consisting of educational workshops and mentoring activities

Sexual Assault Volunteer   **2008 - 2009**
Pepperdine University Counseling Center, Malibu, CA
- Created presentations to train incoming resident advisors on issues and prevention methods of sexual assault
- Led an outreach program that provided psycho-education on sexual assault topics relevant to college students
- Created campus-wide advertisements to campaign against sexual assault

Classroom Volunteer   **2008 - 2009**
Camp David Gonzalez, Calabasas, CA
- Demonstrated interpersonal communication skills to develop strong student-mentor relationships while enhancing the classroom learning experience
- Volunteered as a tutor for at-risk culturally and racially diverse youth to develop social skills and encourage academic achievement

Volunteer   **2005 - 2007**
Turkish American Ladies League, Long Beach, CA
- Coordinated and facilitated cultural awareness discussions among adult women
- Selected pertinent topics and scheduled educational seminars on social and medical issues for women
- Initiated a partnership network for Turkish youth with the American Turkish Association of Southern California

LEADERSHIP AND OTHER EXPERIENCE

Pepperdine Psy.D. Student Government Association   **2014 - 2015**
3rd Year Class Representative
- Served as liaison between student body and student government and reported meeting conclusions and activity updates to cohort
- Participated in monthly SGA meetings and sponsored events
- Led academic task force and arranged speakers for LGBT Clinical Diversity lecture and Professional Development Panel

Psychology Blog Writer   **2012 - Present**
LA Therapy Spot (www.latherapyspot.com)
- Write monthly blog on psychology topics including mindfulness-based approaches, relationships, multicultural issues, parenting, and attachment
- Contribute to blogs on National Alliance on Mental Illness (NAMI)

Social Media Coordinator   **2012 - 2013**
Association for Humanistic Psychology, Los Angeles, CA
- Launched and managed Twitter, Facebook and LinkedIN accounts
- Advertised conferences and events
- Communicated with team and streamline content to ensure information was relevant to organizational goals

President of Psi Chi/Psychology Club   **2008 - 2009**
Pepperdine University, Malibu, CA
- Scheduled and ran group meetings and effectively communicate with members to facilitate events and programming
- Organized and collaborated with members to produce Psychology Club's Annual Graduate School Workshop
- Worked closely with Psychology Club advisor to develop new ideas for programming and outreach

ICC Representative   **2007 - 2009**
Pepperdine University, Malibu, CA
- Created a proposal and presented request to the Inter-Club Council (ICC) and successfully received funding to support a newly founded Psychology Club
- Assisted in organizing and advertising campus-wide fundraiser to support the Violence Intervention Program
- Completed and maintained paperwork required by the Student Activities office

Co-Editor Psychology Newsletter   **2007 - 2009**
Pepperdine University, Malibu, CA
- Assisted in compiling Pepperdine's student-run newsletter containing articles on Psychology, department news, volunteer, and research opportunities

- Wrote and edited articles for the Psychology Newsletter, published two times per semester
- Delegated responsibilities to writers and oversaw the publication and distribution process

PROFESSIONAL MEMBERSHIP

American Psychological Association-Student Affiliate
California Association of Marriage and Family Therapists
Global Association for Interpersonal Neurobiology Studies
Los Angeles California Psychological Association
Psi Chi
Western Psychological Association

LANGUAGES

Conversational in Spanish and Turkish

ABSTRACT

The influx of females into the military in recent years has drawn increasing attention to the impact of extended and often repeated deployments on parent-child attachment. The challenges associated with deployment may be particularly taxing on young children due to their emotional and cognitive immaturity, lack of coping skills and dependence on their caregivers for daily functioning. While children's reaction to parental deployment varies by age, the longer and more frequently a parent is deployed, the greater the psychological, health and behavioral risk for the child. These adjustments can be complicated when mothers suffer psychological distress related to combat exposure, military sexual trauma, increasing their risk of suffering from symptoms of Posttraumatic Stress Disorder (PTSD) and depression. These adjustment and mental health issues, in combination with prolonged separation, will all complicate the reestablishment of a secure attachment bond with their children.

This manual seeks to provide clinicians with a comprehensive overview of the unique deployment-related stressors of female veterans, and their impact on mental health and reintegration. With a focus on the parent-child relationship, this manual will utilize attachment theory as the foundation to understand how the change, disruption, stress and loss experienced during deployment affects young children and their mothers. Moreover, this manual discusses mindfulness-based treatment interventions and practical tools to guide clinicians in aiding female veterans to prepare their children for deployment, cope with deployment, and reestablish the attachment bond upon returning home.

Introduction

Review of Relevant Literature

The wide reaching consequences of war trauma have been well documented in the literature, with a particular focus on male veterans. However, the influx of females into the military in recent years has drawn increasing attention to the unique issues women face during deployment and upon returning home. With longer and more frequent deployments since 9/11, today's military families face the repeated stressors of relocation, separation and reunification (Osofsky & Chartrand, 2013). These stressors are particularly significant for military children, of which 41% are five years or younger (Makin-Byrd, Gifford, McCutcheon & Glynn, 2011). This age range is significant, as it represents a critical period in development to develop attachment security with one's caregiver (Stovall-McClough & Cloitre, 2006). As the attachment system is the foundation of safety, fear and emotion regulation, the separation that occurs between parent and child during the deployment process may threaten the child's sense of security thereby contributing to anxiety, behavioral and emotional problems (Lester & Flake, 2013; Osofsky & Chartrand, 2013).

In order to comprehend how female veterans' experience of deployment impacts her children, it is first necessary to understand the stressors that military service uniquely presents to women. While the number of female veterans continues to grow, their minority status in the military may contribute to distress (Cohen et al., 2012). A study of Operation Enduring Freedom and Operation Iraqi Freedom (OEF/OIF) veterans concluded that, "OIF/OEF women were younger, received more hostile/friendly fire... than PER [Persian Gulf veteran] women" (Fontana, Rosenheck, & Desai, 2010). Subsequently, approximately 44% of female OEF/OIF veterans had at least one mental health diagnosis (Cohen et al., 2012). Exposure to both combat

and sexual assault are associated with Posttraumatic Stress Disorder and makes female veterans' experience of trauma in the military quite unique. Notably, women are twice as likely as men to have a lifetime diagnosis of PTSD in the general population. While between 5 and 15% of active service members meet criteria for PTSD, female veterans are nine times more likely to develop PTSD when they experience some form of military sexual trauma (MST) (Fontana & Rosenheck, 1999; Himmerlfarb, Yaeger, & Mintz, 2006; Suris et al., 2004). Recent studies estimate that 23% of female veterans experience military sexual trauma (Kimerling et al., 2010). The sexual trauma spectrum includes sexual harassment, unwanted touching, completed rape, and coercions including unwanted sexual demands for special privileges (Haskell et al., 2010; Street, Vogt, & Dutra, 2009).

Risk Factors

The picture of female veteran PTSD is further complicated by the fact that female veterans are more likely to have experienced pre-military trauma, with rates as high at 50% for child sexual abuse, which makes them vulnerable to additional trauma and may exacerbate military trauma (Boucher, 2014; Kimerling et al., 2010). Specifically, individuals with unresolved childhood trauma are 7.5 times more likely to be diagnosed with PTSD after experiencing a traumatic event later in life (Stovall-McClough & Cloitre, 2006). As research suggests that those exposed to multiple types of trauma are at risk for development PTSD, female veterans may be especially high risk (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Additional risk factors for developing PTSD include younger age, which is significant for female veterans, as 47.3% are under age 30 (Haskell, 2010; Schlenger et al., 2002; Trautman et al., 2002). Furthermore, military mothers are more likely to be single, under age 25 and come from lower socioeconomic backgrounds, placing additional stress on them (Cohen et al., 2012).

PTSD and Parenting

A significant effect of PTSD is the manner in which it may impact a female veteran's parenting skills. Following MST, female veterans are more likely to experience symptoms of numbness and emotional detachment. These symptoms coupled with PTSD symptoms of avoidance, hyperarousal and reactivity to trauma cues may communicate messages of being unloved to the child (Boucher, 2014; Ruscio Weathers, King, & King, 2002). Moreover, these symptoms may decrease the veteran's ability to engage with and meet the emotional needs of her child (Ruscio et al., 2002). Thus, it appears that symptoms of PTSD may directly impact the attachment system and subsequently the child's emotional functioning as they develop.

Maternal PTSD and Child Outcomes

Though the intergenerational effects of war trauma have been documented in the literature, recent research on the interplay between attachment and interpersonal neurobiology provide insight into the various mechanisms of transmission. Specifically, attachment research indicates that caregivers who suffer from unresolved trauma or anxiety may express more messages to their child that the world is unsafe than those without a history of trauma or anxiety (Hart, 2006). The parent-child relationship may be further disrupted by a decreased ability for empathy, emotional expression and regulation, commonly seen in parents with unresolved trauma (Allen, 2013). Such impaired capacities may be transmitted to the child through the child's vicarious identification and internalization of the caregiver's emotion regulation capacities that may result leads them to take on the psychological burdens of their parents (Doucet & Rovers, 2010). Interpretations of such interactions and signals between parent and child may influence the child's sense of safety in the world as well as their sense of self. Finally, literature suggests that impaired regulatory capacities in traumatized parents may be passed

down to the child, thereby placing the child at higher risk for PTSD if they experience a traumatic experience later in life (Cassidy & Mohr, 2006).

However, a diagnosis of PTSD is not required to impact the attachment relationship. Notably, trauma related beliefs and messages might be communicated by a parent who does not have PTSD. These communications may still result in overt and covert disruptions in functioning and adjustment (Ancharoff et al., 1998; Danieli, 1998). Additionally, Anarchoff et al. (1998) identify four additional processes that contribute to the intergenerational transmission of trauma, including: silence, overdisclosure, identification and re-enactment.

Consistent with these findings, research on veterans indicates that when parents suffer psychological distress during deployments, military children are at risk for adjustment problems (Beardslee et al., 2003). Findings from Vietnam veterans suggest that parental symptoms of avoidance and emotional numbing had a significantly detrimental effect on the quality of the parent-child relationship (Samper, Taft, King, & King, 2004). Vietnam samples also indicate that children whose parents met criteria for PTSD tended to have clinically significant scores on the Child Behavioral Checklist than other children of Vietnam veterans (Rosenheck & Fontana, 1998). Moreover, the severity of parental PTSD symptoms has been associated with child behavior problems (Gold et al., 2007). In addition, preliminary findings in this area indicate that PTSD symptom severity is correlated with female veteran perpetrated psychological abuse (Leiner, 2009). Notably, female veterans are more likely to engage in psychological aggression than physical aggression (Leiner, 2009). This is highly significant and differs from research on male veterans and may indicate a key difference in the expression of anger between male and female veterans and presents an opportunity for targeted treatment. This finding represents a concern due to the growing literature on the relatively stronger emotional impact of

psychological abuse than physical abuse, as well as females' role as the primary caregiver and attachment figure in most families. Thus, a PTSD diagnosis not only affects the veteran, but also the functioning and emotional security of children (Gavlovski & Lyons, 2004; King et al., 2006).

Critique and Need for Further Study

These findings serve to highlight the importance of treating trauma and healing the attachment relationship as early as possible due to the potential long-lasting negative consequences. However, the majority of research on children of veterans to date has been conducted primarily with male veterans from the Vietnam era. The growing number of female veterans, coupled with the large number of military dependent children (approximately 1.3 million) demands clinical treatment that addresses the impact of deployment-related stress on the attachment relationship between female veterans and their children. Moreover, there are currently no existing guidelines for working with both female veterans and their children, further increasing the need for gender sensitive care, as well as a focus on the parent-child dyad. Thus, the present manual addresses the dearth of focused research on female veterans and the impact of deployment stress on the parent-child attachment relationship. This manual will include therapeutic considerations in working with these issues as well as practical strategies to repair and strengthen attachment bonds throughout the deployment cycle.

Methods

Purpose of the Resource

This chapter delineates the methods that were used to develop a manual for clinicians working with female veterans and their children (See Appendix B). The manual will provide descriptive information about issues unique to female veterans during the deployment cycle, PTSD and the impact of deployment on children. Additionally, the manual will provide treatment recommendations as well as strategies to strengthen and repair attachment bonds between female veterans and their children before, during, and following deployment. A literature review informed the development of this manual by investigating current research regarding attachment theory, female veterans, children of veterans, the impact of deployment on family functioning, military trauma, child behavioral outcomes in children of veterans, trauma and attachment and child-parent psychotherapy. This manual integrates research findings on attachment bonds, female veterans' deployment stressors and children's responses to deployment with therapeutic interventions aimed at increasing and maintaining attachment security.

Resource Development

Review of relevant literature. In developing this manual, pertinent literature was accumulated to acquire information regarding attachment theory, female veterans, children of veterans, the impact of deployment on family functioning, military trauma, child behavioral outcomes in children of veterans, secondary traumatization, trauma and attachment and child parent psychotherapy. This literature was identified through an online database search of peer reviewed journal articles (including empirical studies, case studies, and critical reviews), academic books, relevant published therapeutic manuals and from United States Department of Veteran Affairs. The following databases were utilized to conduct literature searches:

EBSCOhost databases, Google Scholar, PsycARTICLES, PsycINFO, and PubMed. Additionally, search engines, including Google and Google Scholar were utilized in an effort to ensure a comprehensive review. Variations of the following keywords were input into the aforementioned search engines: *female veterans, children of veterans, intergenerational transmission of trauma, PTSD, military families, military sexual trauma and military children.* Periodic searches using the aforementioned search terms and databases will be continually conducted in an attempt to ensure that updated information is applied to the manual.

Inclusion criteria. Inclusion criteria of literature that was utilized in the development of this manual was initially limited to female veterans and their children. Although this manual was intended for the exclusive treatment of female veterans and their children, literature was not limited to females due to a paucity of research on this population. Thus, the inclusion criteria were expanded to male veterans and Holocaust survivors due to the benefit that this existing literature contributed to the development of this manual. Moreover, in light of the minimal research on female veterans, excluding literature that includes male veterans would likely have been limiting in the development of the manual.

The clinical recommendations for treating female veterans and their children will be informed by a critical analysis of the literature and indicated needs for future study. Moreover, clinical treatment will be adapted from therapeutic models, such as attachment theory and child parent psychotherapy, which addresses issues of the parent-child bond and the impact of trauma on a child's sense of safety and security.

Consideration of Existing Resources

A comprehensive review of literature pertaining to female veterans and their children revealed manuals addressing the clinical needs of female veterans and their children have not

been developed. While various clinical manuals discuss the impact of PTSD on veterans and their family members (*Clinician's Guide to Treating Stress After War: Education and Coping Interventions for Veterans*, Whealin, DeCarvalho & Vega, 2008; *Clinical Manual for Management of PTSD*, Benedeck & Wynn, 2011), they do not specifically target female veterans nor do they focus on repairing attachment bonds between parent and child. Thus, this manual will synthesize research findings related to attachment theory, intergenerational transmission of trauma, PTSD and female veterans, as well as mindfulness-based treatment approaches.

Results

A resource manual was created for clinicians working with female veterans, as well as their children. The author aimed to make the resource manual comprehensible, concise, and easy to use. The goal of this manual is to provide a resource for mental health practitioners working with female veterans and their children in order to enhance their ability to attend to clinical issues in the parent-child relationship that may arise from the female veteran's deployment. The target audience of this manual is clinicians (e.g. psychologists, marriage and family therapists, licensed clinical social workers, etc.) practicing in a range of settings (VA hospitals, community mental health or private practice) who work with female veterans and their children.

This resource does not intend to provide comprehensive information on female veterans nor is it a step-by-step intervention manual. Instead, the proposed manual is intended to aid clinicians in the enhancement of psychotherapy with female veterans and their children. Finally, the proposed manual would appear to fill a gap in the resources available to clinicians, as a manual targeting clinical treatment of female veterans and their children does not appear to currently exist. The resource manual can be found in its entirety in Appendix B.

Format, Structure and Content

The manual includes four distinct parts. Parts I-III provide a foundation the clinical needs of the target population, while Part IV details clinical interventions. Throughout these chapters, summary boxes are interspersed to provide clinicians with a snap-shot version of information likely to be useful to treatment.

Part I. "Trauma Overseas" will provide the reader with an overview of the target population over three chapters. Chapter 1-3 discuss topics including, background on the current climate of military culture, the process of deployment, demographics of the female veteran

population, stressors unique to female veterans, and commonly occurring mental health difficulties.

Part II. "The Impact of Attachment" provides an overview of attachment theory as applied to female veterans and their children over the course of seven chapters. Topics include the evolutionary underpinnings of attachment, neurobiological processes, elements of secure attachment, and attachment styles. Additionally, this section discusses the breach of attachment between mother and child during deployment, as well as the resulting stressors in the family unit. Finally, this section concludes with developmental considerations of children's stress reactions, and resilience factors.

Part III. "Aftershock: Bringing the War Home" discusses the challenges of reunification and readjustment for parent and child over three chapters. This section also reviews the impact of parental distress and PTSD symptoms and the attachment bond, and the mechanisms of intergenerational transmission of trauma.

Part IV. "Treatment Considerations" describes attachment focused clinical recommendations over the course of four chapters,. The section discusses mindfulness-based interventions as an avenue for increasing secure attachment and subsequently reviews a specific treatment protocol, Mindful Parenting, with an integration of potential adaptations for the military population. This section also includes practical strategies to maintain and enhance attachment throughout the deployment cycle. Finally, this section concludes with a discussion of issues specific to clinicians, such as self-care, one's own mindfulness practice, and cultural considerations in working with this population and delivering acceptance-based treatment.

Discussion

Overview

The existence of attachment and its effect on development has been well documented in thousands of journals (Cozolino, 2012). Despite the growing number of military personnel, extant literature on the impact of parental deployment on their child's attachment is deficient. Given the developmental trajectory of children, sensitive and critical phases may be interrupted because of such inconsistency. Consequently, this may be a catalyst to the development of attachment difficulties; particularly, if a caregiver is unable to effectively cope with traumatic or stressful military experiences. Thus, poor mental health, in tandem with erratic bouts of separation, can potentially complicate the attachment bond between caregiver and child.

Thus, this manual seeks to provide clinicians with an overview of the context in which deployment-related stressors take place for female veterans in an effort to increase understanding of the impact on mental health and reintegration with their children. The current manual concentrates on the parent-child relationship, and thus utilizes attachment theory as the foundation to understand how the change, disruption, stress and loss experienced during deployment affects young children and their mothers. The manual concludes with a review of a mindfulness-based approach to parenting, as well as practical tools to guide clinicians in aiding female veterans to prepare their children for deployment, cope with deployment, and reestablish the attachment bond upon returning home.

Strengths of the Manual

Given the absence of any previous manual specifically addressing the attachment relationship between the female veteran and her child, as well as the application of Mindful Parenting, the current manual is an innovative mental health intervention and highly needed clinical tool for the target population. The content of the manual is both psychoeducational and intervention oriented, providing clinicians with a broad base of information on the target population, attachment theory, interpersonal neurobiology, and mindful parenting.

With well-defined theoretical underpinnings, the manual provides a clear and structured approach in assisting clinicians with understanding the change, disruption, stress, and loss via deployment through the lens of attachment. By laying the foundation for understanding the context of female veterans and the experience of the military child, the manual then reviews a treatment approach rooted in mindfulness; thus the literature informs the clinical practice. Another strength of the manual is that the evolutionary perspective on parenting is woven throughout discussions on attachment, parenting, and the outlined treatment approach. Moreover, discussions of the treatment approach are linked to the specific goal of increasing and enhancing attachment security between parent and child.

The primary treatment approach discussed in the manual, Mindful Parenting is also flexible, as it may be delivered in individual or group formats, as well as a primary treatment to address the parent-child attachment relationship, as well as an adjunctive treatment. This treatment may also be applied for prevention or early intervention, as well as post-deployment. Furthermore, the manual suggests that the Mindful Parenting approach may also be utilized by the non-deployed parent or caregiver to support the attachment relationship the child has available during deployment.

An additional strength is the manual's inclusion of concrete tools and ideas that clinicians may implement with parents to help prepare children for and cope with deployment, all in service of maintaining and reestablishing the attachment bond.

For ease of learning, clinical boxes were used throughout the manual to highlight key concepts for clinicians. The manual also provides recommendations for clinicians regarding the utility of their own mindfulness practice in implementing the treatment and preventing compassion fatigue.

Lastly, the manual encourages clinicians to account for the unique context from which each of their veteran clients comes, in order to deliver culturally competent and tailored treatment to fit the needs of the female veteran.

Limitations of the Manual

Due to the limited nature of research on female veterans, and in particular the impact of deployment of female veterans on their children, the empirical research contained in this manual includes data on both male and female veterans. Nevertheless, increased attention is being given to female veterans in the research as their numbers continue to grow. Thus, some of the material in the manual may become outdated. Additionally, there is little research examining the efficacy of Mindful Parenting with the female veteran population. Congruently, this manual does not account for the challenges that may arise in making treatment accessible, whether in the VA system or in the community, as childcare may be a large barrier for mothers.

While many commonalities exist between male and female veterans, those who serve in the role of both mother and service member likely have unique experiences that may not have been adequately captured as a result of the gap in the literature. Similarly, this manual is does not include case examples or stories from female veterans that could further aid clinicians in

bridging clinical research and practice.

Another limitation of this manual is that while it addresses the prevalence of mental health issues among female veterans, it focuses primarily on the impact of PTSD and traumatic stress on the parent-child relationship. As such, the application of the manual to the broad female veteran population may be limited.

Due to the limited scope of this manual, there are a number of topics that were not addressed comprehensively, such as the level of clinical and mindfulness experience necessary to adequately deliver Mindful Parenting. Other topics include the impact of practicing mindfulness on the veteran's own attachment style and parents teaching mindfulness to their children (though this is discussed in the Mindful Parenting protocol). Finally, this manual did not thoroughly address the sequencing of and potential necessity for parents to receive trauma-focused treatment.

Another limitation of the current manual is that it does not include resources, such as books and websites for clinicians to obtain additional information on female veterans, children of veterans or Mindful Parenting.

While this manual was developed with the intent of aiding clinicians in working with female veterans and their children, the utility of this manual for has not yet been determined. Thus, to assess its usefulness, a formal evaluation of the current manual will need to take place, which is further discussed in the next section.

Future Directions for the Manual

Future revisions of the manual should include updated research on female veterans and their children, as well as the application of Mindful Parenting to the veteran population. Revisions should also include the expansion of topics discussed in the *Limitations of the Manual* section. The future development of this manual should also include informational resources for clinicians, which should be updated with each revision of the manual.

In an effort to further bridge research and clinical practice, the manual should also include case examples, as well as handouts that clinicians can provide to their clients. Furthermore, including a glossary of terms would be helpful in providing clinicians with a quick reference to understand key words and concepts.

Plan for an Evaluation of the Current Manual

After the preliminary additions are made to the manual, an assessment of the manual's sufficiency, accessibility, easy of use, and utility should be made. This assessment would include distributing the revised manual to various experts and clinicians working with female veterans, children of veterans, as well as those utilizing mindfulness-based approaches and there should be a particular emphasis on the utility of the manual in addressing the attachment relationship between veteran and child. Clinicians would be asked to review the manual and provide feedback related to the content and format of the manual. Clinicians should also assess whether any significant information is not included. Informed consent procedures would be implemented whenever human subjects are involved, as well as institutional board review approval.

Plan for Dissemination

Once feedback from experts and other mental health practitioners has been integrated, the treatment outlined in this manual should be piloted with a group of female veterans in order to assess if the same benefits seen in the civilian population translate to female veterans. Additionally, clinicians conducting the pilot treatment may also include any additional adaptations to be made that would further tailor and increase accessibility of the treatment to the veteran population. Subsequently, the manual will be distributed on a larger scale. This may include contacting clinicians both in the VA system, as well as those working in the community. Finally, in an effort to increase accessibility, the manual could be digitally disseminated through a downloadable PDF.

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APPENDIX A

Extended Review of the Literature

Extended Review of the Literature[1]

Introduction

Embedded in affect regulation, distress tolerance, bonding and the formation of expectations for interpersonal interactions is the attachment system. Attachment develops in childhood through the relational dynamics experienced with a primary caregiver. This delicate and instrumental relationship guides plasticity in the brain, such that a series of early interactions with a caregiver may be neurally imprinted. Early attachment experiences shape the architecture of the developing brain, leading to relatively persistent and stable modes of functioning. The attachment system is formed through the consolidation of perceived child-caregiver interactions, becoming intimately tied to the modulation and experience of safety and fear, and the capacity for insight and empathy.

Given the nature of its involvement with such capacities, it plays a pivotal role in modulating the stress response. The interaction between genetics, attachment models and the environment leads to a unique phenotypic expression of resiliency in face of stress and trauma. One demographic where attachment has potentially been severely compromised are combat veterans. The veteran population has attracted increasing attention with the overall number of veterans climbing due to recent wars and overseas conflict. Currently, the veteran population in the United States is estimated at 21.8 million, consisting of 20.2 million men and 1.6 million women (Department of Defense, 2008). While the consequences of war on individuals are well documented, less is known regarding the impact of PTSD on social cognition and connectivity. Synthesizing extant literature on attachment, social neuroscience and trauma, we examine the effects of PTSD on the modulation of affect regulation, fear and social connection.

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[1] Contributions by: Corrine Barner, Aldrich Chan, and Andrew Walker

Introduction to Attachment Theory

The theory of attachment was proposed by John Bowlby in the 1960's and has since been popularized and expanded by many psychologists following in his footsteps. At its simplest definition, the concept of attachment can be defined as the long-standing effect of the relationship between primary caregiver and child, which impacts the ability of the child to see their world as safe or secure later in life, specifically in regard to their interpersonal relationships (Holmes, 1993). This relationship begins to form in the mother's womb and can be seen immediately after a child is born, demonstrated through a series of behaviors that can only be explained as instinctual to both child and mother (Hart, 2006). Research in recent decades has started to highlight some of the neuropsychological and neurobiological mechanisms that facilitate these long-standing patterns of behavior created by emotional interactions.

"Humans are profoundly and lastingly influenced by experience" (Siegel, 2012, p. 65). Throughout life, social relationships shape the brain, which in turn shapes relationships. The brain has been found to be profoundly social in nature, which implicates early attachment experiences as highly influential in brain development and relationships. Due to this experience-dependent plasticity, these early interactions, in combination with our genetic inheritance structure, restructure our neural networks. Research shows that 70% of brain development occurs after birth, which makes up much of the brain's regulatory capacity and provides further support for the link between brain development and social relationships (Cozolino, 2006; Siegel, 2012). The early connection between caregiver and child is a powerful element in brain development and adaptation (Cozolino, 2012). Nevertheless, the plasticity of the brain suggests that both negative and positive experiences can alter brain structure in ways that are long-lasting; however,

it also implies that it is always possible to rewire the architecture of our brain towards more adaptive patterns if necessary (Siegel, 2012).

Maternal Priming for Infant Bonding and Attachment

Evolutionarily, infants and mothers gravitate towards each other for survival. In looking at the nomadic nature of primates, with whom we share our ancestry, the absence of a fixed safe place highlights the functional importance of retreating to a fixed safe person to increase chances of survival (Hesse & Main, 1999). This means of survival translates into biological changes in the mother and behaviors exhibited by the infant, which in turn stimulate maternal behavior, joining mother and child. Towards the latter end of pregnancy, mothers experience maternal preoccupation, where they become attuned to visceral and emotional stimuli in preparation for attuning to their newborn child's needs. This state of preoccupation is associated with a shift to right hemisphere bias in the mother's brain (Cozolino, 2012). This shift is important, as the right hemisphere is responsible for emotion, bodily experience, and autonomic processes (Cozolino, 2012). This maternal attunement continues after childbirth, as new mothers display a heightened sensitivity to interpersonal cues from their babies, designed to increase connectivity between mother and child (Cozolino, 2012). This heightened attunement promotes increased proximity between mother and child, which translates into an increased sense of safety for the child. The process of bonding and attaching are initially modulated by the reward circuitry of dopamine and neuropeptides, such as oxytocin, and vasopressin prior to being regulated by social interactions (Cozolino, 2012). Specifically, attachment between mother and child is modulated by oxytocin, which inhibits aggressive and irritable behavior while stimulating maternal behavior, thus promoting trust. Oxytocin has been found to be produced and released in the amygdala, a brain

structure responsible for activating the fight-or-flight response, and plays a role in regulating stress, fear and anxiety (Jankowski et al., 1998; Marazziti et al., 2006; Neumann, 2007).

Infant Behaviors that Promote Proximity and Bonding

Similarly, infants display particular behaviors that serve to attain proximity and trigger maternal behavior, which in turn promote survival and brain growth (Cozolino, 2012). Thus, the attachment system is the child's "primary solution to experiences of fear" (Hesse & Main, 1999). One example of attachment behavior is prolonged eye gaze, which is present from 6 weeks of age and promotes nurturing behaviors from the mother (Cozolino, 2012; Hart 2006). Other behaviors that promote bonding and proximity between mother and child include, physical contact, rooting reflex, hand grasp, reaching out of the arms, orienting their head towards the sound of mother's voice, social smile and seeking out round shapes, such as the mother's face. (Cozolino, 2012; Hart, 2006). The child's preference for the mother's face, which is a brainstem reflex, serves as means of ensuring an imprinting process and maximizes chances of survival. Biologically operating within these behaviors are opioids and the dopamine reward system, which contribute to feelings of pleasure, safety and happiness, in both the child and mother when proximity is achieved. Thus, when the child is separated from the mother, dopamine levels decrease, leading to a state of distress where the child may become anxious or exhibit behavior to increase proximity and safety. The right hemisphere network is essential to the development of attachment, affect regulation and social relationships. These networks are built through attunement of the caregiver's right hemisphere with the child's and is achieved through the aforementioned eye gaze, facial expressions, and vocalizations (Cozolino, 2012). Thus, the new mother's sensitivity coupled with the child's attachment behavior system serves to link up the mother and child to ensure attachment and ultimately, survival.

Caregiver Sensitivity and Infant Communication

The ability for a parent to attune to the child is highly dependent on parental sensitivity, in which the parent is able to perceive the child's communicative signals, interpret their meaning and respond in a manner that meets the child's internal needs. The caregiver's sensitivity to these signals is the core of secure attachment and vital to the development of the nervous system (Hart, 2006). It is through such compassionate and resonant communication that mother and child are linked (Siegel, 2012). Moreover, these early "primal resonant interactions" contribute to the child's social and emotional learning, which constitute the building blocks of attachment, affection regulation, internal working models and sense of self (Cozolino, 2012, p. 70). "The infant's first exposure to the human world consists simply of whatever his mother actually does with her face, voice, body, hands. The ongoing flow of her acts provides for the infant his emerging experience with the stuff of human communication and relatedness. The choreography of maternal behaviors is the raw material from the outside world with which the infant begins to construct his knowledge and experience of all things human" (Stern, 1977, p. 23). Through the process of imitation, whereby the child is affected by the caregiver's gestures, mimicry or movement he or she responds in a corresponding manner. Imitation requires the caregiver to be attuned with the child's expression, which teaches the child the types of responses their expressions elicit. Without this imitation process, the child will be unable to perceive a link between their behavior and the caregiver's response (Hart, 2006). The fundamental ability to imitate is the biological foundation for the later development of understanding others, empathy and the ability to mentalize (Hart, 2006). Additionally, caregiver and child engage in nonverbal dialogue and interactions, known as protoconversations, which are initiated by eye contact, vocalization, and gestures. Protoconversations reflect the child's internal emotional experience

through external expressions, such as those described above (Hart, 2006). Nevertheless, mutual engagement in both imitation and protoconversations can only occur "when neither the infant nor the caregiver is distracted, nervous or under pressure" (Hart, 2006, p. 23). Such conditions illuminate potential difficulties of caregivers with unresolved trauma, depression or anxiety, in mutually engaging with the child.

Communication of Safety

The dance of attunement between mother and child also involves interpreting signals, such as eye gaze, facial expression, body posture and direction of attention. Beginning at 8 weeks of age, children can visually perceive the caregiver's facial expression due to the development of the occipital cortex. Such perceptions are linked to the developing limbic system, which involves our motivational states and memory formation and is directly connected to our need for attachment relationships (Siegel, 2012). This system becomes more active around 2-6 months old, enabling the child to experience fear and anger and regulate emotions via eye gaze (Hart, 2006). Furthermore, towards the end of the second month of age, the child's social and emotional capacities develop, allowing them to engage in face-to-face interactions with the caregiver through prolonged eye gaze (Schore, 2003).

The visual information that infants glean from signals, such as eye gaze, communicates intimacy, safety or danger (Freire, Eskritt, & Lee, 2004; Kleinke, 1986). The direct connection of attachment with a child's ability to feel safe and protected also means that it is inherently tied to fear (Hesse & Main, 2009). Appraising the safety or danger of one's environment involves the rapid assessment abilities of the amygdala (Adolphs et al., 1994; Adolphs et al., 1995; Hamann et al., 1996; Young et al., 1995). When the amygdala registers a face as fearful, the sympathetic nervous system becomes aroused and alert to danger, and the brain releases hormones that

prepare us for survival. Additionally, this arousal simultaneously limits brain growth and therefore our socioemotional development due to the release of glucocorticoids into the system (Marsh, Kozak & Ambady, 2007). Glucocorticoids are released during times of stress and can contribute to significant dendritic degeneration and cell death in the areas of the brain, such as the hippocampus, if present for long periods of time (Cozolino, 2012). Thus, if a child is raised in an environment where their caregiver represents both survival as well as a threat, their attachment system, and therefore capacity for empathy, mentalization, and secure relationships in the future, is negatively impacted on both an emotional and physical level.

Eye gaze is related to both self-regulation and sense of self. For example, averted eye gaze by the caregiver can signify rejection or exclusion and can activate feelings of low self-esteem, decreased relational value, and the impulse to act aggressively against those who are looking away as an last resort to regain proximity (Wirth, Sacco, Hugenberg, & Williams, 2010). Conversely, large pupil size signals positive feelings and expresses the caregiver's interest in the child (Cozolino, 2012). As children become more mobile and independent, they utilize caregivers' facial expressions as a barometer of safety and danger while exploring their environment. In these situations the caregiver's expression directly regulates the child's behavior. When maternal expressions discourage explorative behavior, the child's curiosity is inhibited and they may perceive the world as unsafe causing them to immediately increase their proximity to their caregiver (Hart, 2006). Caregivers suffering from anxiety or unresolved loss or trauma may express more messages to their child that their world is unsafe than those without a history of trauma or anxiety. Not only does the interpretation of such signals impact a child's sense of safety in the world, but it also influences their sense of self. Children come to know themselves through the response of others, beginning with the caregiver, thus their self-image is

based on how the caregiver perceives the child (Hart, 2006). For example, a child who receives messages that they are unwanted will likely have the general feeling of being unloved (Sroufe, 1989; Sroufe, Cooper & DeHart, 1992). Ultimately, the linkage of the occipital cortex and limbic system in evaluating the safety of the world based on maternal expressions has implications for the development of the child's view of the world, self-image, and later relationship functioning.

In addition to nonverbal expression of safety, danger and love in the world, caregivers attune to the child's affective experience through affective mirroring, using vocal and facial expressions to match the child's emotional state. "Through the repeated experiences of attuned dyadic interaction with the mother or primary caregiver, the child becomes increasingly effective at signaling, engaging and responding to the other, even prior to the use of words" (Brazelton, 1989; Schore, 1994; Siegel, 1999; Stern, 1985). Thus, the initial basis of the attachment relationship is founded on the caregiver's ability to consistently attune to the child's bodily states and needs through sensorimotor interactions, reinforcing the reciprocal effect of their interactions with their environment (Ogden, Minton & Pain, 2006). Moreover, affective mirroring and attunement communicate to the child that he/she is seen and felt, contributing to a sense of safety within the attachment relationship by increasing their sense of being understood and effective in their environment (Hart, 2006).

Attunement and the Developing Nervous System

A child's ability to modulate the arousal and stimulation of their nervous system is dependent on the caregiver's ability to perceive or attune to the child's signals (Beebe & Stern, 1977; Brazelton, Koslowski, & Main, 1974; Stern, 1977). The interactions of play and laughter serve as mechanisms that enable the developing nervous system to manage higher states of arousal (Hart, 2006). Attunement between mother and child not only helps link them together,

but also helps the child then attach their undeveloped nervous system to the caregiver's more mature nervous system in order to organize and develop the child's process of regulation (Emde, 1989). This dyadic regulation fosters development of the orbital prefrontal cortex, which is a vital component of self-regulation. In particular, gray matter in the left lateral orbitofrontal gyrus plays a critical role in the regulation of positive and negative emotions (Mak et al., 2009; Ogden, et al., 2006). This structure's function develops during infancy when new emotional experiences are prominent, thus highlighting the salience of early emotional experiences and interactions (Schore, 1994, 1997).

Emotional Attunement and Unresolved Trauma

Although the development of affect regulation requires attuned and consistent interactions, a sense of security is not attained through perfect attunement, but rather it relies on the intention for connection and repair when a miscommunication inevitably occurs (Siegel, 2012). Through attunement with their caregiver, the child attempts to alter their internal state and arousal level to match that of the caregiver (Hart, 2006). Infants rely on the regulation of their caregiver to maintain their arousal at optimal or level or re-regulate if they become hyperaroused (Ogden et al., 2006). Emotional attunement promotes the communication and transfer of the caregiver's right hemisphere, as the caregiver brings their own history into the interaction and the child's development takes place within that relationship (Hart, 2006). However, this process can become detrimental to the child's development when the caregiver is hyperaroused, as often occurs in parents with unresolved trauma. If the child relies on the caregiver's emotional regulation to regulate their own internal states, it is plausible that parents with unresolved trauma or grief will unconsciously communicate their dysregulated emotional world to their children. Such unconscious communication shapes the developing brain, thereby influencing personality

development, behavior and belief systems (Cozolino, 2012). The ability of the caregiver to affectively attune to the child's internal experience is essential for the development of a child's ability to understand others and develop empathy (Hart, 2006).

Ruptures in attunement can create emotional instability in the child and leave them feeling disconnected and longing to reconnect with the caregiver (Siegel, 2012). Ed Tronick demonstrated this notion in the Still-Face Experiment involving a four-month-old infant interacting with his caregiver (Siegel, 2012). Specifically, when the caregiver stopped responding in an attuned manner by exhibiting a still face, the child became agitated and attempted to re-establish connection using a variety of strategies. When these attempts failed, the child turned to self-stimulating behavior in an effort to self-regulate. Thus, the child's state of being is highly dependent on responsive signals from the caregiver to maintain emotional regulation (Siegel, 2012). Additionally, if the caregiver doesn't attune to certain emotions, she/he can keep the child from developing an integrated and organized nervous system, resulting in self-regulation difficulties (Hart, 2006)."When the caregiver fails to attune with the infant and instead corrects the child through exaggerated misattunements, the child is left with a feeling of being wrong and unloved" (Hart, 2006). Thus, misattunement between caregiver and child can also result in a child feeling emotionally isolated and having difficulties regulating emotions later in life (Tronick et al., 1998). However, if reparations of misattunements occur, such experiences help the child in handling future stressful situations, as the child develops the expectation of being relieved of their distress by the caregiver, aiding in the sense of being able to cope with negative emotions.

"At the core of attachment for human infants is the regulation of emotional experience, including the experience of fear" (Carlson, 1998 p. 1107). Children develop their ability to

regulate arousal and affect within the context of the attachment relationship. The combination of the caregiver's nervous system with a caring and attuned environment provides a foundation on which self-regulation can develop (Damasio, 1998; Schore, 2003; Stern, 2004). Thus, affective attunement is directly linked to affect regulation.

Neural Impact of Attachment

Over 200 million years, humans have evolved to have a built in need for attachment through genetically determined neural networks that motivate attachment behavior in order to develop our brains and survive (Siegel, 2012). As discussed prior, the early experiences between caregiver and child regulate the child's affect and activate the growth of the brain through emotional availability and reciprocal attuned interactions (Emde, 1988). Specifically, attuned communication between the caregiver and child integrates the left and right hemispheres of the brain. The early developing right hemisphere is responsible for nonverbal communication, visuospatial skills, stress-response mediation, autobiographical memory and an integrated map of the whole body. The later developing left hemisphere is involved in linear, logical and linguistic skills. Thus, attunement by the caregiver stimulates production and growth of fibers that integrate the left and right hemispheres of the brain, which directly contributes to the nervous system's ability to balance and regulate (Siegel, 2012). Additional neural networks associated with the attachment system include the basal forebrain network and the default mode network. The role of the basal forebrain is to mediate emotional and visceral responses based on past learning, utilizing the amygdala, anterior insula, anterior cingulate cortex, and orbital medial prefrontal cortex (OMFC; Hariri et al., 2000; O'Doherty et al., 2001; Price et al., 1996; Tremblay & Schultz, 1999). As both the social brain networks and fear circuitry share the amygdala, relationships and modulation of fear become the same (Panksepp, 2001). The basal forebrain

network is also integral to our understanding of affect regulation, as disruption of the anterior cingulate cortex and basal forebrain circuitry results in abnormal regulation of anxiety (Cozolino, 2012). The default mode network, which is activated in the absence of external stimulation, is related to our experience of self and others. Thus, the basal forebrain and default mode network work together to help us be aware of ourselves and imitate the experiences of others within ourselves, serving as the structures for emotional resonance, attunement and empathy.

Neuroception

One of the key features in determining whether or not an environment is safe is the ability to accurately perceive the presence of threats within one's environment. However, this is not always a conscious process. The term neuroception describes the neural circuitry, stemming from subcortical structures, that function outside of conscious awareness to detect threats in the environment (Porges, 2003). These circuits are constantly running in the background and serve to trigger defensive reactions (i.e. fight or flight responses) if a threat is perceived. The neural circuits that control one's perception of danger are influenced by interactions with one's environment throughout childhood and can be significantly impacted by traumatic events (Porges, 2003). If the circuitry surrounding this process is altered, cues regarding threat or safety can be misperceived and therefore limit the ability to find security or balance within their world.

Polyvagal Hierarchy

While the nervous system is often thought of as a mechanism to regulate homeostasis, Stephen Porges' polyvagal hierarchy theory suggests that the nervous system is best described in terms of a hierarchy of response rather than balance. Previous theories attributed arousal purely to the sympathetic nervous system, while Porges' theory postulates that there are three hierarchically organized subsystems of the autonomic nervous system that manage our

neurobiological responses to environmental stimulation (Cannon, 1928; Grinker & Spiegel, 1945). Each subsystem correlates with a particular level of arousal. The first subsystem is the ventral parasympathetic branch of the vagus nerve, and is also referred to as the social engagement system. This subsystem correlates with an optimal arousal zone. The second subsystem is the sympathetic system or mobilization system, which is correlated with a hyperaroused zone. The third subsystem is the dorsal parasympathetic branch or immobilization system that corresponds with a hypoaroused zone (Ogden et al., 2006).

Social Engagement System

The primary system of operation is the social engagement system, which is the most evolutionarily recent in the hierarchy. Appropriately named, it enables humans to be flexible in our manner of communication and aids in regulating regions of the body necessary to engage in social interaction. This system is active in safe environments, as it inhibits defensive limbic structures and calms visceral states, making way for social engagement (Porges, 2003).

The social engagement system involves the ventral branch of the myelinated vagus nerve, which begins in the brainstem and contains specialized neurons that compose the reticulating activating system and thus are related to an individual's level of wakefulness. With its origins in the brainstem, the social engagement system regulates eyelid opening, facial muscles for emotional expression, middle ear muscles to distinguish human voice from background noise, mastication muscles, laryngeal and pharyngeal muscles and head tilting and turning muscles responsible for social gesture and orientation (Porges, 2003). Control of these components enables rapid engagement and disengagement with the environment. The social engagement system has been coined a "braking" mechanism based on its ability to rapidly decrease or increase heart rate, which allows us to slow down and remobilize while inhibiting primitive

defensive reactions (Porges, 2005). Thus, in a non-threatening environment, this system regulates the sympathetic nervous system and enables individuals to respond in a flexible adaptive manner, which facilitates engagement with the environment and helps us form positive attachment and social bonds (Porges, 2004, 2005). When this system is able to achieve stable development, it allows children to effectively regulate the sympathetic and dorsal vagal systems to cultivate a wider window of tolerance. In doing so, this provides the child, and later adult, with the ability to both tolerate distress and use it as an opportunity for growth (Ogden et al., 2006).

While the social engagement system dominates the hierarchy in order to maintain arousal at an optimal level, the system is superseded in traumatic circumstances that require more adaptive sympathetic responses. Therefore, when the social engagement system is deemed to be ineffective, it automatically gives way to the mobilizing fight or flight response of the parasympathetic nervous system (Ogden et al., 2006).

Sympathetic System

The second tier of the hierarchy involves a mobilization response governed by the sympathetic nervous system. This system is evolutionarily more primitive and less flexible than the social engagement system and increases our level of arousal in order to mobilize survival behavior, such as a fight or flight response. As the brain detects and interprets danger, a chain of neurobiological events is set into motion that increases arousal. Initially, the amygdala becomes activated and the hypothalamus engages the sympathetic nervous system, which causes the release of a cascade of neurochemicals that increase arousal (McEwan, 1995; van der Kolk, McFarlane, & Van der Hart, 1996; Yehuda, 1997, 1998). The increased level of arousal resulting from the activation of the mobilization system maximizes one's chances of survival (Levine &

Frederick, 1997; Rothschild, 2000). This subsystem enables physical action, such as running and fighting, which consume energy. When these responses are successful and the perceived level of threat decreases, the cascade of danger-related neurochemicals is metabolized through these energy-consuming actions, which returns arousal to an optimal level. Moreover, even when physical action does not occur, one's level of hyperarousal may gradually recede to an optimal zone when the threat has disappeared.

Dorsal Sympathetic Branch

If both the social engagement and mobilization systems are not successful in assuring safety, the dorsal vagal complex, also known as the immobilization system becomes the final line of defense. This system becomes activated by a lack of oxygen in the bodily tissue and serves to lower arousal into the hypoarousal zone. The most primitive of the hierarchy, the dorsal vagal complex is unmyelinated and originates in the brainstem. This system triggers survival-related immobilization reactions, such as feigning death, behavioral shutdown and fainting (Ogden, et al., 2006). Thus, an increase in dorsal vagal tone is associated with conservation of energy, such as "a relative decrease in heart rate and respiration, and accompanied by a sense of 'numbness,' 'shutting down of the mind' and 'separation from the sense of self' (Siegel, 1999 p. 254). Nevertheless, extreme dorsal vagal arousal can occur when action is not viable and can result in fainting, vomiting or loss of control of the rectal sphincter (Ogden et al., 2006 p. 31). Even worse, when sustained over a prolonged period of time, immobilization can be fatal for mammals (Seligman, 1975).

Polyvagal Theory and Implications of Trauma on Affect Regulation

Overall, humans tend to respond in a hierarchical manner when faced with environmental threats or challenges. This neural hierarchy is beneficial to human survival, as our response to

the environment is hardwired and the hierarchy delineates a second and third system of response to perceived threats. Governing the hierarchy, the social engagement system inhibits these more primitive, alternative response systems, allowing for regulation of overall arousal levels in non-traumatic daily life. Nevertheless, when the social engagement system continuously fails at ensuring safety, such as in chronic childhood trauma, the system habitually shuts down. When this occurs, there is no braking mechanism to check the sympathetic or mobilization system, resulting in a high level of arousal and inappropriate responses to one's environment. "When the social engagement system has repeatedly failed to avert danger in situations of chronic trauma, the long-term availability of this system may tend to decrease, thus diminishing the individual's future capacity for relationships" (Ogden et al., 2006 p. 30). Thus emerges the importance of safety and attachment in regulating the nervous system and providing future opportunities for healthy environmental and social interactions.

Schemata Formation

To develop healthy affect regulation and self-esteem, a child needs to internalize the experiences of soothing touch, being held gently and securely, comforting warmth, balanced sleep, hunger, stimulation, and a sustained positive emotional state (Cozolino, 2012). These repeated patterns of resonant and attuned interactions gradually develop into an internalized sense of the caregiver. Furthermore, children's internalization of the experience of the caregiver repeatedly moving them from dysregulated to regulated states, fosters a sense of being able to cope with negative emotions, and later translates into the ability to self-soothe (Cozolino, 2012; Hart, 2006). Therefore, as the neural structures responsible for self-regulation mature through attuned and interactive regulation, the child moves from dependence on the caregiver for regulation to an internalized regulation ability (Schore, 2001).

Essentially, the internalized interactions with early caregivers influences an individual's ability to self-regulate and cope with distressing experiences. While these early experiences are a central determinant in shaping child development, they are not consciously accessible. Rather, they are stored in implicit memory systems, as a result of an age congruent hippocampal-cortical development. Thus, the emotional, somatic and visceral memories that spring from repeated early relational experiences form an "internalized mother" around 5-6 months of age and the summation of these experiences forms an attachment schema. The attachment schema, stored in implicit memory, is composed of the affective state or how the child feels while interacting with the caregiver as well as memories of interactions with others (Hart, 2006). By serving as templates for being with others, attachment schemas aid children in adapting to their environment by helping them form expectations, adjust their interactions and control future exchanges (Cozolino, 2012; Hart, 2006).

The internalized sense of the mother shapes the neural infrastructure of implicit memory, thus serving as the emotional backdrop for psychological, biological and behavioral structures, the child's expectations of relationships, the world and the future (Cozolino, 2012). Within implicit memory, interactions with caregivers become associated with feelings of safety and warmth or anxiety and fear (Cozolino, 2012). These associations compose the core of attachment schema and are responsible for shaping emotional experiences, relationships and self-image (Cozolino, 2012). Attachment schemas become activated in all interpersonal relationships; they determine whether an individual seeks or avoids proximity with others, as well as their ability to utilize interpersonal connection for emotional and physiological balance. Additionally, attachment schemas become visible when under stress due to their influence on affect regulation. Schemas influence current experiences and interactions based on predictive reflex prior to

conscious awareness (Nomura et al., 2003). The predictive reflex occurs unconsciously due to the fast-processing nature of the amygdala, which bypasses the frontal lobe and alerts to us potential danger prior to conscious processing. Thus, the amygdala links our present experiences with evaluations from the past and directly influences our emotional reactions and behaviors (Cozolino, 2012). Ultimately, its role is to steer us towards what is life-sustaining and avoid what has been proven to be life-threatening (Cozolino, 2012). The development of positive attachment schemas leads to an enhanced biochemical environment in the brain for regulation, growth and immunological functioning (Cozolino, 2012). However, when secure attachment schemas do not form, the child may lack a sense of security and the development of age-appropriate behavior, such as curiosity and social interaction can be impaired (Hart, 2006). Moreover, negative attachment schemas leads to increased likelihood of emotional and physical illness and decreased hippocampal cell concentration, likely due to neurotoxic levels of sustained cortisol (Quirin, Gillath, Pruessner, & Eggert, 2010). Schemas also influence the romantic partners we choose, the nature of our relationships, the experience of self, our emotional world, and the way we parent. Research indicates that children who experience deficient early parenting are more likely to associate with an uncaring romantic partner and therein lies potential for cross generational transmission of poor affection regulation and interpersonal functioning (Barrett, Hickie & Parker, 1992; Beckwith, Cohen & Hamilton, 1999).

Impact of Attachment Patterns

While much of the conversation so far has been geared towards understanding the *how's* of attachment, the impact of attachment patterns are important to understand in a more global context as well. Following in John Bowlby's footsteps, Mary Ainsworth and Mary Main identified four patterns of attachment stemming from their research on parent-child interactions.

These attachment styles were labeled as avoidant-resistant, ambivalent, disorganized and secure (Hart, 2006). As discussed previously, when a child receives the necessary attunement, empathy, and general security from their primary caregiver, they will develop a secure sense of self and an internal working model that allows them to appropriately regulate their affect and interactions with others (Holmes, 1993). This is considered a secure attachment style and the child is more likely to see the world as safe to explore as they develop into adults. Through secure attachment schemas, children develop strong social engagement systems due to their ability to self regulate, which in turn allows them to safely explore their interpersonal environment. In adulthood, these children are able to seek proximity to others and use social relationships to tolerate distress and disappointment (Cassidy & Shaver, 1999). Conversely, insecure attachment patterns, where necessary conditions are not met during infancy and childhood, mean that the world is generally viewed as unpredictable and dangerous. Therefore, the child maintains very little control over their emotions or relationships in their life (Bartholomew & Horowitz, 1991).

These attachment patterns, which Bowlby believed to be established by age three, have been found to be moderately stable throughout one's life (Holmes, 1993; Scharfe & Bartholomew, 1994). These patterns are reinforced as new information about the environment is filtered through previously developed schemata; thus, contributing to the long-lasting and cyclical nature of attachment patterns. In addition to secure attachment, insecure attachment patterns include avoidant-resistant, ambivalent, and disorganized. All three are rooted in the concept that early childhood experiences were defined by their caregiver's lack of ability to adequately attune to the child's needs or provide a stable sense of safety and security (Main, 2000).

Research indicates that infants with avoidant attachment styles have been raised in environments where the caregiver demonstrates a dismissive and rejecting parenting style, which teaches them to dismiss their own needs for affection or attention (Hart, 2006; Siegel, 2012). In adulthood, these same individuals tend to minimize their own negative experiences, have poor emotional expression capability and a limited and seemingly selective memory of childhood and past relationships (Sable, 2007). Children with ambivalent attachment patterns are described to have childhood experiences characterized by inconsistent caregiver attunement or intrusive interactions with the caregiver, leaving the child without the ability to appropriately regulate or stabilize their emotional experiences (Hart, 2006; Siegel, 2012). Adults who developed ambivalent attachment patterns during childhood have difficulty expressing a coherent narrative of their past, managing their impulsivity and frustration, and become emotionally preoccupied with their history (Beckwith et al., 1999; Hart, 2006). The final category within insecure attachment patterns is disorganized and often occurs in environments that are threatening, unpredictable, and unable to meet the child's physical needs, leaving them "fearful without resolution" (Siegel, 2012, p. 125). These environments are offered characterized by abuse or chronic neglect. Caregivers in this category fail to regulate the child's affect by either overstimulating or understimulating the child without any repair, resulting in prolonged periods of intense negative emotional states. Children with this attachment style display disorganized and contradictory behavior, which can be understood as the simultaneous activation of two opposing systems: attachment and defense (Liotti, 1999; Lyons-Ruth & Jacobvitz, 1999; Main & Morgan, 1996; Ogawa, Sroufe, Weinfield, Calson & Egeland, 1997; Van der Hart et al., 2004). Such disorganized behavior has been observed in 80% of maltreated infants and has been demonstrated to be a statistically significant predictor of both dissociative disorders and

aggressive behavior (Carlson, 1998). Coping strategies from this attachment pattern translate into adulthood as poor emotional regulation, inability to react or manage their internal experience during stressful situations, and can include symptoms of dissociation as well (Buchheim & Lamott, 2003; Shemmings & Shemmings, 2011).

Insecure Attachment and Mentalization

While insecure attachment patterns are variable in both developmental and long-term outcomes, there are similarities in mental and emotional regulatory consequences. One example is the loss or reduction of the ability to self-reflect, specifically regarding emotions. Without a coherent or secure internal working model to organize emotional states of others, insecurely attached individuals have difficulty identifying their own emotional states (Cozolino, 2012; Hart, 2006). Furthermore, without an understanding or awareness of one's own internal state, the ability to manage and self-soothe becomes an almost impossible task. The lack of self-reflective capacity diminishes the individual's ability to understand the presence of a direct link between their own behavior and the relative reactions and behavior of others. Consequently, an individual with insecure attachment experiences difficulty appropriately moderating their behavior, leaving them to react impulsively and in ways that might seem counterintuitive or erratic to those around them (Hart, 2006; Siegel, 2012). Difficulties understanding one's own behavior as well as the behavior of others is related to the individual's ability to engage in the process of mentalization.

Fonagy (2006) defined mentalization as "[…] a form of preconscious imaginative mental activity, namely, interpreting human behavior in terms of intentional mental states" (p. 4). This skill is facilitated by the mother's ability to perceive the child's internal world, identify with it and "simultaneously realize that the child is separate" (Ogden et al., 2006 p.42). The capacity for mentalization is further established through the child's internalized representation of their

primary caregiver. As previously discussed, this internal representation, or schema, is formed

through the caregiver's ability to reliably aid the child in re-regulating their emotions after

distressing experiences (Miller & McDonough, 2002). The caregiver's affect regulation ability

thereby becomes the child's, which also defines their understanding of their own internal states

as well as of others' in their environment. If the child repeatedly experienced inconsistent,

dismissive, or fearful interactions with their caregiver, their capacity to understand the intentions

of those around them is likely diminished due to incoherent internal representations (Busch,

2008). Conversely, a child in a securely attached relationship with their caregiver feels safe to

explore the minds of others, knowing that they will be re-regulated if they become distressed,

thereby allowing for the development of mentalization to occur gradually and for the child to

develop trust in their imaginative mental activity (Fonagy, 2006). Overall, insecure attachment

has been found to impact individuals by reducing their ability to regulate negative emotions,

direct attention away from upsetting stimuli, inhibit impulses, plan ahead, focus, and interpret

social information accurately (Sable, 2007).

In order to develop the capacity to mentalize, the child needs to learn several

foundational cognitive and emotional regulatory skills. One is the ability to self-regulate or self-

soothe, which is developed through early interpersonal relationships with the primary caregiver

(Fonagy, Luyten, & Strathearn, 2011). If surrounded by adults who are unpredictable,

dysregulated, or fear-inducing, the child may avoid attempting to take on the perspective of their

parents or caregivers to avoid distress similar to their experience during previous interactions

(Fonagy et al., 2011). These individuals not only struggle to find emotional balance on their own,

but also they see others' internal worlds as something to avoid and potentially fear. Additionally,

the ability to focus on another's state of mind requires an attentional component that is directly

related to prefrontal development in the brain (Fonagy, 2006). However, this component tends to be underdeveloped in children raised in high stress environments. Particularly, the presence of high levels of stress hormones throughout developmental years limits the development of areas such as the pre-frontal lobe, and therefore can impair aspects of cognitive functioning, including attention. Effortful control over one's dominant responses develops during toddler years and relies on a transition of the brain from orienting to executive attention networks (Rothbart, Posner, & Kieras, 2006). Although a relatively new theory, evidence supports that this transition occurs through interactions between parent and child, as the use of toys to distract or soothe a child when they are upset becomes the child's foundation for coping mechanisms during their toddler years (Rothbart, Sheese, Rueda, & Posner, 2011). The social implications of an underdeveloped mentalization capacity are immense and can lead to significant difficulties in managing and understanding one's interpersonal world.

An individual who has not learned to adequately or accurately engage in mentalization processes likely experiences the world as unpredictable and chaotic. Without a reliable template to understand their internal states, they tend to externalize and project their own dysregulated emotional states onto others (Fonagy, 2006). This can lead to a lack of trust that others will be able to meet their needs or that they themselves will be able to react appropriately to the needs of others. Without a sense of trust in themselves or others they may struggle to maintain healthy romantic relationships and long-lasting friendships. Furthermore, research has shown that parents with strong mentalization abilities stimulate the same growth patterns in their children through symbolic play and the ability to understand and meet their child's needs on a consistent basis. These interactions create neural patterns that aid the child in developing the foundational abilities

for mentalization (Allen, 2013). Thus, the adult who does not develop this capacity from early childhood experiences will likely re-create similar patterns in their own children.

Patterns of brain development that stem from a child's attachment interactions serve as the basis for their ability to engage empathically with their interpersonal world as they develop into adults. Empathy includes a broad spectrum of human emotional experiences, such as our ability to seemingly match another's emotions, our concern toward someone else, and the ability to take the perspective of someone else's feelings (Decety, 2011). The development of empathy has been linked to nurturing environments between primary caregiver and child and is based on the concept that a secure environment while growing up allows the child to develop an ability to approach others and therefore begin to relate to their internal experiences (Mikulincer et al., 2001; Panfile & Laible, 2012). The securely attached brain allows the individual to readily explore and experience the perspectives of others, free from fear of becoming dysregulated without being able to recover (Decety, 2011; Mikulincer et al., 2001; Sherman, 1998). The ability to explore another's emotional experience is rewarded, reinforced, and developed as the individual is found to be correct in their interpersonal assumptions and therefore reacts appropriately within social situations. If a child has a supportive and secure internal working model, they will perceive relationships as worthwhile to pursue, and empathic behavior provides the means that they can attach and connect with others in socially engaging situations (Panfile & Laible, 2012). A person whose developmental environment does not allow for the growth of self-regulatory capacities might have difficulty engaging in empathic attunement with others, which will limit their ability to connect.

Studies have found that in times of personal distress, one's ability to attune to another's experience (i.e. empathy or mentalization ability) is lowered and brain networks related to the fight-or-flight response system are engaged to increase survival (Batson, Early, & Salvarani, 1997; Decety, 2011). This increase in anxiety levels decreases cognitive flexibility, which impairs the individual's capacity to take on another's perspective, understand their emotional distress, and engage in empathetic-helping behavior (Bell, 2009). When a child is raised in an environment that is fear inducing or chronically distressing, the effects of this can be long-lasting. Specifically, a chronic heightened level of anxiety can lead to sustained inability to engage in cognitive flexibility or the perspective-taking processes (Liotti, 2006). Research has shown that individuals with insecure attachment styles are less likely to interact empathically with others due a lower ability to regulate their own anxiety and distress (Tummala-Narra, Liang, & Harvey, 2007). The implications are that they are less likely to engage in pro-social behavior or reciprocal emotional interactions and will likely struggle to make sense of interpersonal relationships. Thus, empathy has a profound and deep impact on our ability to engage in meaningful relationships.

Impact of Trauma on Brain Development and Attachment Patterns

Another major facet in attachment research is the impact of trauma on an individual's development and ability to live in our very social world. Individuals who experience traumatic events have a wide range of responses to trauma, however it has been commonly observed that, there is often a "breakdown of adaptive mental processes" (Liotti, 1999, p. 293). More specifically, "Early disruptions in attachment have enduring detrimental effects, diminishing the capacity to modulate arousal, develop healthy relationships, and cope with stress" (Sable, 2000; Schore, 1994; Siegel, 1999). Traumatic experiences have been defined as those that evoke

extreme distress, undermine the individual's ability to regulate emotional suffering, and reduce openness to interpersonal relationships due to reduced ability to trust others (Allen, 2013). Studies have shown that interpersonal trauma, such as physical or sexual abuse, has been related to anxious styles of attachment at later stages of development (Tummala-Narra et al., 2007). When the perpetrator of trauma is the caregiver, it represents a significant failure in the attachment system and undermines the child's ability to recover from arousal and feel safe. In such situations, the social engagement system may not adequately develop and can leave the child without the ability to regulate their nervous system during times of hyperarousal, leading them to spend significant time in hyper or hypo arousal zones.

"When chronic failure of the social engagement system to negotiate safety and protection is experienced, as is often the case in chronic childhood trauma, the system habitually shuts down" (Ogden et al., 2006, p. 31). With frequent shutting down, long-term availability of the social engagement system is decreased, which impedes the child's ability to engage in their social environment and further reduces their coping skills during times of stress or high arousal. Early trauma also prevents the orbitofrontal systems from maturing and ultimately leads to a decreased ability to regulate one's affect (Ogden et al., 2006). Unlike the comfort of interactions with caregivers in secure attachment relationships, which increase emotional regulation, children with abusive caregivers experience sustained traumatic states of mind, reducing emotional regulation (Schore, 2002). If these traumatic states of mind take place throughout their first few years of life, they can impact the development of the brain and significantly reduce the growth potential in areas responsible for emotion management, cognition and social aspects (Cozolino, 2012).

During the first two years of life, the child's brain develops at a rapid rate, integrating new information and forming neural pathways based on what is presented to them in their environment and how their needs are met (Cozolino, 2012; Hart, 2006; Schore, 2002; Siegel, 2012). Traumatic experiences impact the brain in much the opposite way secure parenting styles do, decreasing the brain's ability to regulate distressing experiences, or adapt to the individual's environment. Stress or fear-inducing situations maintain the child in survival mode, which inhibits their ability to engage in adaptive coping skills as well as other important physical functions. In response to stress, the body releases stress hormones, such as cortisol, which serve to break down cell bodies and can ultimately result in dendritic degeneration and cell death in the brain (Bremner, 2001; Cozolino, 2012). During critical and sensitive periods of brain growth, the sustained presence of cortisol, and other stress hormones, will prevent the brain from developing important neural connections. Trauma from caregivers during early developmental years is especially detrimental due to the child's budding pre-frontal cortex and can leave the child with limited inhibitory capacity (Cozolino, 2012). Typically, the child looks to their parent to contain their negative experiences, however when the caregiver is the source of fear, they are left without a model of or source of comfort which can influence their perception of the world at large (Hart, 2006; Siegel, 2012).

Additionally, without regulatory capacities to aid in comforting and regulation, children and adults from abusive situations often engage in experiential avoidance, an effort to avoid distressing reminders of traumatic events (Erbes & Polusny, 2008). Such avoidance can be observed in abused children, who have been found to avoid looking at the faces of adults in general. In the past, particular facial expressions may have served as precursors to abusive situations and therefore gazing at faces holds the potential to trigger memories of abuse and

becomes a source of anxiety (Cozolino, 2012). While avoiding upsetting stimuli to prevent distress may be adaptive initially, experiential avoidance can become an obstacle to healing and building one's capacity for emotion regulation. Furthermore, avoidance behavior, specifically when related to interpersonal trauma, serves to isolate the individual and thereby reduce sources of support in their lives, which may further exacerbate existing distress (Erbes & Polusny, 2008).

Traumatic Experiences, PTSD, and Psychopathology

Traumatic experiences are highly correlated with psychopathology later in life. There is a significant body of research on the connection between trauma and diagnoses of Posttraumatic Stress Disorder (PTSD). However, some studies have found depression to be more common after a traumatic experience (Fowler, Allen, Oldham, & Frueh, 2013). Depression as a result of traumatic experiences has been theorized to be related to impairments in the neuroregulatory systems, lowered stress tolerance and regulation, and a heightened risk for interpersonal trauma in the future (Cloitre, Stovall-Mcclough, Zorbas, & Charuvastra, 2008; Fowler et al., 2013). Furthermore, significant differences have been found between the presence of depression in incidents of interpersonal trauma versus impersonal trauma (i.e. natural disasters or car accidents), the latter having almost no impact on depression rates following a traumatic incident (Fowler et al., 2013). Drug addiction rates have also been found to be much higher in those with histories of interpersonal trauma. Without a schema that aids in regulating emotions, the individual might seek outside assistance in the form of substances, to find relief from distressing emotions, intrusive thoughts or anxiety (Padykula & Conklin, 2009). This coping strategy is an example of experiential avoidance, discussed above, and further harms the individual's ability to self-soothe and could potentially harm brain functioning.

Interpersonal trauma and disorganized attachment patterns in childhood have also been directly linked to a development of personality disorders, specifically borderline personality disorder (Cassidy & Mohr, 2006). Some theories propose that the dissociative qualities evident in some personality disorders, such as borderline personality disorder, are actually coping skills created to defend the individual against mental pain associated with abuse, neglect and traumatic experiences (Becker-Weidman, 2006). Others have posited that dissociative symptoms are not actually defensive mechanisms and are instead "[…]an intersubjective failure of the integrative processes that normally create a unitary sense of self during the first year of life[…]" (Liotti, 2006, p. 67). Nevertheless, individuals with personality disorders often display significant difficulty engaging in sustained or healthy interpersonal relationships.

The most common diagnosis associated with childhood or adult trauma is PTSD. Studies demonstrate that early attachment patterns, formed during critical periods in childhood, are directly related to whether or not an individual will be diagnosed with PTSD after a traumatic experience later in life. Specifically, it has been found that individuals with unresolved childhood trauma are 7.5 times more likely to be diagnosed with PTSD after experiencing a traumatic event later in life (Stovall-McClough & Cloitre, 2006). It is possible that this finding is partially due to the fact that the coping skills associated with secure attachment are lacking in disorganized, avoidant, or anxiously attached individuals. For example, one study found that securely attached soldiers were more likely to seek out social support systems after a trauma and were therefore found to be less likely to develop symptoms of PTSD later (Dekel, Solomon, Ginzburg, & Neria, 2004; Tummala-Narra et al., 2007). Additionally, it has been found that anxious attachment styles demonstrate more fatalistic coping skills, inhibiting their ability to engage in adaptive coping behaviors (Zurbriggen, Gobin, & Kaehler, 2012).

One of the most critical researching findings on attachment style and trauma is the intergenerational transmission of trauma within the parent-child relationship. Parents with disorganized attachment style are more likely to raise children with disorganized attachment styles (Allen, 2013; Nilsson, Holmqvist, & Jonson, 2011). A parent with unresolved trauma typically displays impaired ability for empathy, understanding emotion, and emotional regulation, which leads to significant disruptions in the parent-child communication (Allen, 2013). One of the psychological pathways through which the transmission of these impaired capacities occurs is the child's vicarious identification and internalization of the caregiver's emotion regulation capacities that leads them to take on the psychological burdens of their parents, which when unresolved, seem confusing and lack resolution (Doucet & Rovers, 2010). The parents' regulatory capacities are passed down to the child and therefore put the child at higher risk for PTSD if they experience a traumatic experience later in life (Cassidy & Mohr, 2006). These findings serve to highlight the importance of treating trauma as early as possible due to the potential cost for those involved in the individual's life and the potentially long-lasting negative consequences.

In light of understanding the attachment system as the foundation of safety, fear and emotion regulation, as well as the detrimental impact of early trauma, it is necessary to turn our attention to Post Traumatic Stress Disorder (PTSD). As discussed above, disruption in the attachment schema can increase an individual's chances of being diagnosed with PTSD after experiencing a traumatic event. Additionally, problems in social functioning have been found to be both a cause and symptom of PTSD, creating a unique dynamic for both treatment and diagnosis. As such, while considering current literature in neuroscience and psychology, social

fragmentation, previously thought to be secondary to PTSD, may be better understood as a primary cluster within PTSD symptomalogy.

Post Traumatic Stress Disorder

In recent years, the impact of PTSD on social-emotional functioning has been attracting increasing interest because of the relational difficulties encountered by returning veterans. High rates of domestic violence, child abuse, and suicide in these returning veterans are forcing us to look beyond the confines of the DSM for more comprehensive ways to diagnose and treat these serious and chronic consequences of war. Currently, the symptoms of PTSD are organized into four clusters: intrusions, avoidance, negative mood/cognitions and hyperarousal. Based on this framework, social dysfunctions have been interpreted as secondary consequence of the broad impact of amygdala dysregulation. These clusters, identified as diagnostic criteria in the DSM, are described in further detail in the sections below.

Criteria b, cluster 2: intrusions. The presence of intrusions has been a longstanding trademark symptom cluster of PTSD. Intrusions may appear as distressing dreams, dissociative reactions, psychological distress and physiological reactivity in response to internal or external cues that represent aspects of the traumatic event (Friedman et. al., 2010). Individuals with PTSD may re-experience their traumatic memories regardless of the time, place or context in which the event happened (Whalley, et. al, 2013). For many researchers, PTSD has been understood as a disorder of memory (Brewin, 2011; van der Kolk, 1996). Hellawell and Brewin (2004) hypothesized a dual representation theory of posttraumatic stress disorder. They proposed that patients with PTSD can consciously discriminate between flashbacks and ordinary traumatic memory periods. They discovered that "flashbacks were characterized with a greater use of detail, particularly perceptual detail, by more mentions of death, more use of present tense and more mention of fear, helplessness and horror" (p. 1).

Flashbacks are typically experienced as if they are occurring in the present and are further described by those who experience them as vivid and detailed (Whalley, et al., 2013). Research investigating the occurrences of flashbacks has linked them to brain networks involving the amygdala and hippocampus. Hippocampal connectivity is lateralized to left cortical regions and is related to autobiographical memory. Emotional memory has been associated with bilateral activation, amygdala and insular activity (Cabeza and St. Jacques, 2007; Svoboda et al., 2006). Moreover, qualities of the amygdala system include its tendency to "generalize" while the hippocampus facilitates a process of "discrimination" (Cozolino, 2012). Sripada, Wang, Sripada, & Liberzon (2012) found that veterans with PTSD showed a greater positive connection between the amygdala and insula, and reduced connectivity between the amygdala and hippocampus. As such, the reduced connectivity between the amygdala and hippocampus may demonstrate

dissociation between intensely feared memories and the ability for the hippocampus (or autobiographical memory) to contextualize and regulate them. In support, Bremner and colleagues (1997) found that PTSD patients had a left hippocampal volume that was 12% smaller than controls, which was also related to impairments in the functioning of their verbal memory. Bessel van der Kolk (1994), further elaborated that traumatic experiences are not encoded via declarative memory systems (e.g. verbal and factual memory) but rather procedurally (e.g. skills, habits, reflexive actions). Whereas an event that is not life threatening or traumatizing, emotional memory would be contextualized, integrated and regulated by autobiographical memory, a traumatic experience would result in an incoherent and disconnected network. Flashbacks may thus be attributed to a 'bypassing' of corticohippocampal networks during the consolidation of a traumatic experience, leading to 'undigested' somatosensory and emotional memories. As such, external stimuli remotely suggestive of an individual's trauma may activate subcortical systems, triggering a flashback (Cozolino, 2010).

An examination of cases beginning at the year 1856 encountered that flashbacks, in their current definition, were practically non-existent before the First World War, and sparse during the Second World War. The proportion of veterans experiencing flashbacks sharply increased after the Gulf War. Jones and Wessely (2003) observed that earlier accounts of flashbacks, such as "shell shock," stressed somatic symptoms. They concluded that flashbacks are, at least to some degree, culturally bounded. Leys (2000), described a flashback as a cinematic-like reproduction of a past traumatic event. One hypotheses argued by many researchers is that there has been a direct association between flashbacks and films (Blank, 1985). Jones and colleagues (2003) believed that the introduction of television sets in the 1950s and 1960s may contribute to the emergence of involuntary images re-experienced in PTSD, as defined today. They argued

that the intrusive nature of flashbacks may reflect the television as a source of often unexpected and unsettling imagery in a familiar and secure environment.

Such discussion brings to question: if the nature of PTSD has notably changed with the zeitgeist; how are these symptoms influenced by and how do they subsequently affect interpersonal relationships? Concurrently, if PTSD is a disorder of memory, with flashbacks interrupting the consolidation and retrieval of memory; how have attachment systems, as a form of implicit memory, been altered in such a way that maintains the cyclical perpetuating nature of PTSD.

Criteria c, cluster 3: avoidance. Considerable attention has been paid in recent studies to the avoidance and arousal/reactivity symptom clusters of PTSD. Studies of avoidance and hypervigilance to reminders of trauma have hypothesized that these features are rooted in a strategy of attentional bias towards aversive cues that leads to the dysfunction characterizing PTSD. For example, one recent study utilizing an emotional stroop and detection of target task found that PTSD patients were slower than members of the control group in their response to emotionally negative words in comparison to neutral words (El Khoury-Malhame et al., 2011). Following a regimen of Eye Movement Desensitization and Reprocessing (EMDR) therapy, the attentional bias ceased and members of the PTSD group responded to stimuli similarly to those in the control group.

The DSM-V (American Psychiatric Association, 2013) described "persistent avoidance of stimuli associated with the traumatic event(s)" as one of the diagnostic criteria for PTSD. This criterion is broken down into two subsets: first, "avoidance of or efforts to avoid distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s)" and second, "avoidance of or efforts to avoid external reminders (people, places, conversations,

activities, objects, situations) that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s)."

One traditional way of studying avoidance reactions to stimuli reminiscent of a traumatic event has been through electric shock studies of lab rats, whose avoidance conditioning often resembles the symptoms of PTSD patients. In a 2005 study, for example, forty electric shocks to the tails of rats led to an increase in the number of avoidance behaviors 24 hours later as compared to a home cage control group of other rats (Brennan, Beck, Ross & Servatius, 2005).

Outside of the realm of animal studies, recent conflicts have demonstrated the impact of avoidance responses on the quality of life experienced by people with combat-induced PTSD. In a study of civilian refugees from the 1998-1999 Kosovo war, researchers found that a high reliance on experiential avoidance as a coping strategy for dealing with trauma-induced distress led to a lower quality of life (Kashdan, Morina & Priebe, 2009). The presence and impact of the avoidance symptom of PTSD in Kosovo refugees a decade after the war was found to have striking similarities with Social Anxiety Disorder. These findings indicated that a withdrawal from social interactions can be an aspect of the impairment caused by an overreliance on experiential avoidance strategies. Conversely, civilian survivors of the conflict's refugee crisis who did not exhibit Social Anxiety Disorder or the avoidance symptom of PTSD reported a higher quality of life at the time of the study than those who did. Given the relational nature of Social Anxiety Disorder and its overlap with the experiential avoidance of PTSD, the results of this study may provide a clue to the relational impairment often seen in individuals with PTSD. Although this study was of civilian refugees, similar impairment is often found in combat veterans with PTSD who suffer from "intimate relationship problems that accompany the

disorder and can influence the course of veterans' trauma recovery" (Monson, Taft & Fredman, 2009).

Experiential avoidance combined with neurobiological factors, such as the behavioral inhibition system and behavioral activation system, may further contribute to the development of posttraumatic stress symptoms. In Jeffrey Allen Gray's biopsychological theory of personality, the behavioral inhibition system is hypothesized to control avoidance motivation and the behavioral activation system is hypothesized to control approach motivation. In a study of 851 female college students who had survived a traumatic event, individuals high in behavioral inhibition system sensitivity and experiential avoidance exhibited higher posttraumatic stress symptoms than those with high behavioral inhibition system sensitivity but low experiential avoidance (Pickett, Bardeen & Orcutt, 2011). The researchers concluded that avoidance combined with an increase in the behavioral inhibition system sensitivity produces the symptoms of PTSD, strengthening avoidant behavior.

Furthermore, avoidance may lead to a decreased ability to read emotional signals in others, especially ones that impart negative emotional information that may be reminiscent of the traumatic experience. In a recent study of Iraq and Afghanistan war veterans utilizing a faces matching task with electroencephalography recording, veterans with PTSD were less accurate in identifying angry faces. They also demonstrated decreased early processing of emotionally charged faces, regardless of the emotional content, and blunted processing of faces that imparted social signals of threat (MacNamara, Post, Kennedy, Rabinak, & Phan, 2013). Demonstrating a possible bridge between avoidance symptomology and increased arousal, the study also showed decreased accuracy by PTSD veterans in identifying angry faces as the veterans' hyperarousal

symptoms increased. Thus, mistaken identification of individuals as threatening could be a part of the social avoidance seen in many individuals with PTSD.

Criteria d, Cluster 4: negative cognitions and mood. The DSM-IV criteria for PTSD initially consisted of three symptom clusters: Re-experiencing, Avoidance, and Hyperarousal. A fourth cluster, negative alterations in cognitions and mood, emerged in the DSM-V. This new cluster, Criterion D, included symptoms C3-7 from the DSM-IV with two new additions: "Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world" and "Pervasive negative emotional state"(DSM-V, 2013). An abundance of evidence exists supporting these two symptoms as a characteristic response due to traumatic stress (Friedman, Resick, Bryant, & Brewin, 2010). Overall, this new cluster represents "Negative alterations in cognition and mood associated with the traumatic event (s) beginning or worsening after the traumatic event(s) occurred..." the symptoms of which reflect the persistency of negative emotional states and cognitions alongside a disinterest and detachment from others (American Psychiatric Association, 2013).

PTSD has been observed in combat veterans and survivors of sexual and physical abuse. Commonalities in patterns of negative cognition have been observed among these populations. Such cognitions include self-blame, biased or otherwise incorrect views on the causes or consequences of a traumatic event, and the belief that they are vulnerable, insufficient and/or have identified with an unalterable belief that they have changed for the worse. Some of these beliefs may include: "I am a bad person," "nothing good can happen to me," "I can never trust again" (Friedman et al., 2010).

Negative affects experienced by individuals with PTSD are widespread. They may include fear, helplessness and horror, as well as self-states of anger, guilt, and shame (Friedman et al., 2010). A study measuring spontaneous brain activation in veterans diagnosed with PTSD, found increased activation in the right anterior insula, which was suggested to contribute to poor interoception and processing of negative emotions (Yan, et al. 2013). Yan and colleagues (2013) also found a positive connectivity between the insula and amygdala. Put together, these may be implicated in how individuals with PTSD may experience elevated levels of negative emotional processing as well as fight/flight bodily responses in an environment that no longer requires such adaptive measures.

In other veterans with PTSD, Sripada and colleagues (2012) found an anti-correlation between the amygdala and dorsal/rostral areas of the Anterior Cingulate Cortex. The dorsal ACC plays roles in reward-based decision-making and learning, whereas the rostral ACC is involved in affective responses to errors (Bush, et al. 2002). Thus, an affected individual may have an impaired ability to think logically when in an arousing situation. Moreover, errors and rewards in the environment may be overlooked due to the irregularities of their emotional responses, causing them to exacerbate or repeat behaviors that previously led them to a negative cognition or emotion.

Causes for persistent negative mood and cognitions. Veterans are frequently haunted by combat related cognitions. Many veterans confronted events that led to the violation of their core beliefs, such as witnessing extreme violence, or failing to prevent an ethical transgression (Steenkamp, Nash, Lebowitz, & Litz, 2013). Additionally, veterans may have failed to perform their duties resulting in the harm of others. Moreover, they may have engaged in deliberate cruelty and torture. Litz, et al (2009) introduced the concept of moral injury to describe the long

term impact of such experiences behaviorally, psychologically, socially and spiritually. Among Vietnam Veterans, killing another person has been demonstrated to be the strongest predictor of PTSD symptomology relative to other combat related event (Litz et al., 2009). According to Hoge (2010), 48-65% of returning soldiers from Operation Iraqi Freedom (OIF) reported being responsible for the death of an enemy, and 14-28% responsible for the death of a civilian. Notably, when killing was isolated as a separate variable, all other variables were no longer significant predictors of PTSD symptoms (Fontana & Rosenheck, 1999). It has also been shown to be a significant predictor of future alcohol abuse, anger and relational problems among Iraq War veterans. Moral injuries may thus lead to a cyclical maladaptive pattern comprised of negative cognitions and emotions resulting in self and interpersonally destructive behaviors (Maguen et. al, 2010a).

Criteria E, Cluster 5: Arousal and Reactivity. The DSM-V includes "marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred" as a diagnostic criterion for PTSD. This symptom cluster is broken down into six areas, two or more of which are required for an individual to meet its requirements: "1. Irritable behavior and angry outbursts (with little or no provocation) typically expressed as verbal or physical aggression toward people or objects 2. Reckless or self-destructive behavior 3. Hypervigilance 4. Exaggerated startle response 5. Problems with concentration 6. Sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep)."

A considerable amount of recent research has examined these areas. The primary hypothesis regarding the biological roots of hyperarousal is increased amygdala activity in response to cues reminiscent of a previous threat. In another recent face-matching and detection

of target study that utilized fMRI scans, researchers found enhanced amygdala activity in PTSD patients compared to the control group, a finding that positively correlated with anxiety inventory scores, PTSD symptomology, and disengagement bias. The study concluded that preliminary support exists to implicate the amygdala in abnormal attention orientation to perceived threat experienced by patients with PTSD (El Khoury-Malhame et al., 2011).

Similarly, in a study requiring participants to complete a dot-probe task with two levels of stimulus-onset asynchrony, Bardeen and Orcutt (2011) found a link between attentional threat bias and the maintenance of posttraumatic stress symptoms. Difficulty disengaging from stimuli perceived as threatening correlated with higher levels of posttraumatic stress symptoms, as demonstrated by the appearance of more symptoms associated with attentional threat bias in during longer stimulus-onset asynchrony.

In addition to the amygdala involvement observed above, the parahippocampal gyrus and the cuneus have also been implicated in PTSD-related hyperarousal. In a 2011 study, participants who had experienced the Sichuan earthquake were compared to a control group in terms of the event-related brain potentials (ERPs) generated during an emotional stroop task. The results indicated that negative words generated a more negative ERP deflection than positive words, a finding that was not found in the control group and likely indicates heightened emotional arousal in response to negative words. The discrepancy between the earthquake survivors and the control group may be attributable to a greater susceptibility to emotional arousal to negative stimuli due to their highly negative experience of an earthquake. Analysis of the ERPs isolated the effect to the parahippocampal gyrus and the cuneus, which the researchers "suggest may be related to the automatic recollection of the traumatic experience" (Wei, Qiu, Du & Luo, 2011).

Another recent ERP study hypothesized that hypervigilance and hyperarousal enhance self-perception in detecting one's errors, which the individual instinctively perceives as having the potential to diminish safety. The study examined an electrocortical response, known as the error-related negativity (ERN), which appears in the brain when an error is committed on a task. The ERN was observed in a group of PTSD veterans of Iraq and Afghanistan, combat veterans of those wars without PTSD, and a healthy control group. Members of the groups completed an arrow version of the flanker task, which assesses an individual's ability to inhibit responses that are inappropriate in a specific context. The ERN magnitude was the same between the PTSD and control groups, while the non-PTSD combat group demonstrated a blunted ERN response in comparison to the PTSD and control groups. The researchers concluded that while "combat trauma itself does not affect the ERN response," a weaker ERN in individuals exposed to combat trauma who have not developed PTSD could reflect "resilience to the disorder, less motivation to do the task, or a decrease in the significance or meaningfulness of 'errors,' which could be related to combat experience" (Rabinak et al., 2013).

Disordered sleep as a symptom of hyperarousal in PTSD is an area of research that has received considerable attention. As Harvey, Jones & Schmidt (2003) noted, "the role of sleep in PTSD is complex, but…it is an important area for further elucidating the nature and treatment of PTSD." Spoormaker and Montgomery (2008) noted the high prevalence of nightmares, insomnia, sleep apnea and periodic limb movements in PTSD patients. In addition to the comorbidity of sleep disorders/disturbances for those diagnosed with PTSD, sleep disturbances also appear to be antecedents of the development of PTSD as well as symptoms that can linger after PTSD has otherwise remitted (Spoormaker & Montgomery, 2008).

While sleep disorders resulting from PTSD are often treatment-resistant and cause poor daytime functioning, few polysomnographic studies have shed light on the neurobiological underpinnings of sleep disorders in PTSD patients. However, some researchers hypothesize that a link between the amygdala and medial prefrontal cortex could be at the root of the sleep-wake regulation disturbances that characterize sleep-related hyperarousal activity in PTSD patients. Specifically, Germain, Buysse & Nofzinger (2008) hold that persistence of amygdala activation, along with blunting of the medial prefrontal cortex during REM sleep, leads to a decrease in the normally occurring deactivation of the wakefulness-promoting areas of the brainstem and forebrain, such as the posterior hypothalamus, thalamus, and raphe nuclei, that occurs in sleep. Additionally, the activation of the anterior hypothalamus and solitary tract nucleus that normally occurs with the onset of sleep appears to be blunted in sleep-disorder suffering PTSD patients.

Posttraumatic nightmares are one of the most prevalent and distress-inducing types of sleep disturbances in PTSD. Many nightmares accurately replay the trauma in an autobiographical sense, while others are theorized to contain distressing imagery that is symbolic of the traumatic event rather than a replay of it. However, current research regarding posttraumatic nightmares is limited (Phelps, Forbes & Creamer, 2008).

Controversy

While many researchers have focused closely on the arousal and avoidance symptom clusters of PTSD, others have called the DSM's model of PTSD into question. Maes et al. (1998) called for a spectrum model in which posttraumatic symptoms would be understood by their level of severity rather than broken down into their present categories. Asmundson et al. (2000), on the other hand, used confirmatory factor analysis to determine that a "hierarchical four-factor model (comprising four first-order factors corresponding to re-experiencing, avoidance,

numbing, and hyperarousal all subsumed by a higher-order general factor) provided the best overall fit to the data" about PTSD. Similarly, another confirmatory factor analysis by McWilliams, Cox and Asmundson (2005) found that "the model comprised of four intercorrelated factors (re-experiencing, avoidance, numbing, and hyperarousal) received the strongest support, but did not meet all the goodness-of-fit criteria."

Conclusion

Current research in affect regulation, neuroscience, and PTSD is re-shaping the way that we are thinking about trauma and the individual. The interaction between early attachment system and environment throughout one's life is inherently complex and has been directly linked to resilience in the face of traumatic experiences, such as combat. The increasing focus on returning veteran's difficulties within their social lives, including the family unit, supports the notion that social impairments may be more central than previously thought to the overall presentation, and therefore recovery process of PTSD.

Understanding the interaction between traumatic experiences and attachment style, which shapes affect regulation, distress tolerance, and other factors important to human connectivity, such as empathy and mentalization, may have important implications for the prevention and treatment of PTSD. By understanding this process, we may have the opportunity to better prepare or screen soldiers prior to combat, thereby reducing the overall number of veteran's diagnosed with PTSD.

In addition to the potential for preventative measures, a deeper understanding of the social impairments within PTSD symptomalogy may have implications for more effective treatments revolving around social recovery. Treatments focusing on social recovery may be

more effective in reducing the rates of domestic violence, child abuse, and suicide, thereby

reducing the number of people affected by the experience of war.

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APPENDIX B

A CLINICIAN'S GUIDE TO WORKING WITH FEMALE VETERANS AND THEIR
CHILDREN

A CLINICIAN'S GUIDE TO WORKING WITH FEMALE VETERANS AND THEIR CHILDREN

TABLE OF CONTENTS

Part I: TRAUMA OVERSEAS

Chapter 1
Military Culture: The OIF/OEF Era

Overview

The wide reaching consequences of war trauma have been well documented in the literature, with a particular focus on male veterans. However, the influx of females into the military in recent years has drawn increasing attention to the unique issues women face during deployment and upon returning home. The current conflicts in Afghanistan (Operation Enduring Freedom) and Iraq (Operation Iraqi Freedom) have resulted in the highest rate of military mobilization since the Vietnam War (Gewirtz, et al., 2010). More than 2.5 million service members were deployed in support of Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF), comprising 3.5 million individual deployments (Defense Manpower Data Center, 2014; DoD, 2012).

With continuing conflict in the Middle East and across the world, military families will likely experience repeated deployments, which average approximately 12 months (Compton & Hosier, 2011; Hosek, Kavanagh & Miller, 2006). The decreased amount of time at home between deployments may create disruption in the lives of veterans and their families (Lester & Flake, 2013). Military family life present unique demands, such as risk of injury or death, long or unconventional work hours, frequent relocation, organizational culture and norms, family separation due to deployment, field assignments and training (Segal, 1986).

Thus, today's military families face the repeated stressors of relocation, separation and reunification (Osofsky & Chartrand, 2013). Given the number of military families affected, prevention and intervention strategies must account for the totality of the veteran's experience,

including her unique cultural context and personal history, as well as her experiences and responsibilities as a service member, including her role as a parent.

Deployment

When considering the impact of deployment on military families and children, it is important to consider the type and length of deployment a veteran has experienced, as well as their military branch, and both visible and invisible injuries. The culture of the military is one of collective values and beliefs, such that the needs of the group and the mission are prioritized above any individual focus (Warchal, West, Graham, Gerke, & Warchal, 2011). Such an attitude undoubtedly ensures cooperation and increases chances of survival during deployment. Given the continuing conflicts in the Middle East, service members experience regular deployments to locations that may be violent, have difficult living conditions, and face imminent danger, injury, and sometimes death (Chandra, Lara- Cinisomo, et al., 2010; Esposito-Smythers et al., 2011).

Deployments may be categorized as routine/normative or combat/combat support. Routine deployments are scheduled, non-combat related and include planned training exercises, peacekeeping operations and tours of duty that are unaccompanied. This type of deployment is most common in the military and has a high likelihood of entailing a clear plan, including length and location of deployment (Department of Defense, 2010).

In contrast, combat or combat support missions tend to come with greater uncertainty regarding duration and/or location (Weins & Boss, 2006). The ambiguity of this type of deployment can undoubtedly provoke greater levels of stress in the family (Boss, Beaulieu, Wieling, Turner, & LaCruz, 2003).

In an effort to meet the post 9/11 demands for service members, the U.S. Military has sent service members to Iraq and Afghanistan more frequently and for longer periods of time.

Notably, of the approximately 1 million veteran parents who have ever deployed to Iraq or Afghanistan, 48 percent served at least two tours (Department of Defense, 2010).

According to the Department of Defense (2012), over a third of service members self-identify as an ethnic or racial minority. Compared to white, non-Hispanic service members, those from racial and ethnic minority backgrounds are disproportionately represented in enlisted ranks. These individuals subsequently receive lower salaries and typically have less education (DoD, 2012).

Unique to the OEF/OIF era operations is that an unprecedented number of Reserve and National Guard members have been activated since 911. As Reserve members are typically geographically dispersed and not often living in a military community, these children and families may have limited resources to cope with deployment stress and may also be physically and emotionally isolated (Department of Defense, 2010). Furthermore, Reserve and National Guard members do not receive regular military training and are less likely to have established military support networks. These service members' families are accustomed to less frequent separations, ranging from a weekend to two weeks for training. Subsequently, these service members and their families are not prepared for the rapid and lengthy deployments that have been characteristic of OEF/OIF (Faber et al., 2008; Huebner et al., 2010).

OEF/OIF Injuries

Following deployment, many service members return to their families changed by both visible and invisible injuries. Brain trauma from blast force, called Traumatic Brain Injury (TBI) has become the signature physical injury of the OEF/OIF era. Between 2001 and 2014, approximately 230,000 veterans were identified from suffering from some type of TBI (ranging from mild to severe) as a result of exposure to blast events. Symptoms associated with TBI

include headache, seizure, motor disorders, sleep disorders, mood changes, and cognitive and speech difficulties (Alexander, 2015). Invisible injuries may include Posttraumatic Stress Disorder (PTSD), as well as depression, anxiety, loss and grief, captivity and torture, hearing loss and substance abuse (Cozza & Guimond, 2011; McFarlane, 2009; Warchal et al., 2011).

Physical injuries have become particularly important for OIF/OEF veterans due to increased survival rates following injuries as a result of medical advances, as well as exposure to intermittent explosive devices (Tanielian & Jaycox, 2008). Visible injuries include but are not limited to amputation, spinal cord injury, severe burns, and disfigurement. As such, clinicians should consider how both visible and invisible injuries of deployed parents may impact children's psychological and physical well-being (Department of Defense, 2010).

Since OEF was initiated in October 2001, over 5,400 veterans have lost their lives and over 3,700 military children age 18 years old and younger have lost their parent. Of these children, almost half (48%) are elementary school-aged children; are five years old, of which 1 in 4 are five years old or younger. Furthermore, more than 41,000 children have a veteran parent who has been wounded, injured, or ill (Department of Defense, 2010).

Given the current climate of military culture and deployment in the post 9/11 era, clinicians must consider the linkage between parental deployment and children's social, emotional, and cognitive development (Department of Defense, 2010). However, the majority of research on children of veterans to date has been conducted primarily with male veterans from the Vietnam era.

The growing number of female veterans, coupled with the large number of military dependent children (approximately 1.3 million) demands clinical treatment that addresses the impact of deployment-related stress on the attachment relationship between female veterans and

their children. The goal of this manual is to provide a resource for mental health practitioners

working with female veterans and their children in order to enhance their ability to attend to

clinical issues in the parent-child relationship that may arise from the female veteran's

deployment.

Chapter 2

Who Are Female Veterans?

Female Veteran Demographics

Today's 2,271,222 female veterans is a rapidly growing group that tends to be young, with 47.3% under age 30 and 78% under age 40 (Goldberg, 2008). Moreover, over half of all active duty service members are married to another service member, further complicating the disruptions, separations and transitions of a military family. Specifically, dual military couples experience challenges related to managing long work hours, separation from family, physical danger related to military training and operations, as well as raising children together (Martin & McClure, 2000).

Notably, active-duty service members tend to marry and start a family earlier than civilians in the same age range (Hayes, 2010). Thus, with 30% of female veterans playing the role of both service member and mother, clinicians are obliged to understand the impact of military service on children of veterans. This need for understanding becomes even more paramount when considering that the female veteran population is projected to grow from less than 10% to nearly 18% by 2040 (Haskell, 2010). Such numbers undoubtedly continue to increase with female veterans' current involvement in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). Specifically, women comprise approximately 14% of forced deployed in OEF/OIF conflicts, representing 180,000 deployed female troops (Department of Defense, 2008). While a limit remains on where females are permitted to serve within each branch of service, women currently serve in positions of military office, fighter pilots, convoy duties, intelligence, maintenance, medics, nurses and doctors in combat zones (Street et al., 2009).

The stressors associated with military service and deployment are particularly significant for military children, of which 41% are five years or younger (Makin-Byrd et al., 2011). This age range is significant, as it represents a critical period in development to develop attachment security with one's caregiver (Stovall-McClough & Cloitre, 2006). As the attachment system is the foundation of safety, fear and emotion regulation, the separation that occurs between parent and child during the deployment process may threaten the child's sense of security thereby contributing to anxiety, behavioral and emotional problems, all of which will be covered in later chapters (Lester & Flake, 2013; Osofsky & Chartrand, 2013).

> ➢ The female veteran population is rapidly growing; they tend to be young and married to another service member.
> ➢ Female veterans serve in each military branch. Positions include military office, fighter pilots, convoy duties, intelligence, maintenance, medics, nurses and doctors in combat zones.
> ➢ 30% of female veterans are in the role of service member and mother with nearly half of children under the age of 5. This age range represents a critical period in development to establish attachment security with the primary caregiver, who may be cycling through deployment.

Clinical Points

Issues Unique to Female Veterans

In order to comprehend the magnitude of such issues, it is first necessary to review the specific deployment-related stressors that female veterans experience and subsequently carry into their homes. Though many of the mental health and readjustment issues experienced by female veterans may mirror those of male veterans, the new generation of female service members may also face unique threats to their mental health.

While the number of female veterans continues to grow, their minority status in the military may contribute to distress (Cohen, Gima, Bertenthal, Kim, & Marmar, 2012). Thus, entering the service, women are faced with navigating the challenges of adapting to both a

military culture and male dominated culture. Additionally, exposure to both combat and sexual assault, among other interpersonal stressors makes female veterans' experience of trauma in the military quite unique and may provide a window into the challenges that female veterans and their families face.

Women and Combat: A Look at History

Historically, women have served in combat operations in every US military conflict since the Revolutionary War (Goldstein, 2001). While they tended to service in clerical roles or as nurses, as was the case in the Vietnam War, they began to play a larger role in the Persian Gulf War (1990-1991), with women comprising approximately 11% of total forces. The Gulf era represents an increase in women's ability to expand their duties to combat support positions, such as military police, on warships, and flying refueling and fighter planes. Following the Gulf War, changes in the Department of Defense policy and congressional legislation lead to 90% of military occupations becoming available to women (Donegan, 1996). Thus, women's participation in current overseas conflicts has expanded beyond previous roles in terms of the number of women serving and the nature of their involvement (Street et al., 2009). Combat exposure may include experiencing enemy fire, ambush, the need to use fire power to eliminate personal threats in combat situations, as well as, witnessing death and injury to members of their unit or civilians in the war zones (Street et al., 2009; Vogt, Pless, King, & King, 2005).

Women in OEF/OIF combat. Though women are currently still barred from serving in direct combat positions, they are not protected from exposure to combat while serving in support positions in which they may be required to leave military bases, work alongside combat soldiers and come under direct fire (Hoge, Clark, & Castro, 2007). Women may be exposed to combat in serving in roles of military police, convoy transportation, intelligence, pilots, medics and

mechanics. Moreover, women who served as medics, nurses, military police or convoy drivers were exposed to threat of intermittent explosive devices (IED's) and carnage (Mattocks et al., 2012). While research continues to suggest that women experiences lower rates of combat exposure than men, findings suggest that OEF/OIF female veterans are younger and are being exposed to increasing levels of combat compared to prior conflicts, such as Operation Desert Storm (Carney et al., 2003; Fontana, Rosenheck, & Desai, 2010). Specifically, 12% OIF female soldiers classified as experiencing moderate levels of combat and 3% classified as experiencing high levels of combat exposure (Mental Health Advisory Team, 2006; Rona, Fear, Hull, & Wessely, 2007). It is important to note that there is less distinction between combat and non-combat roles in the current conflicts due to insurgency warfare in which attacks may come in many forms. Such warfare has led to unprecedented levels of combat exposure for female service members.

Military Sexual Trauma

While female veterans encounter many of the same life-threatening combat experiences as male veterans, they at times experience very different issues, such as an increased chance of sexual assault, harassment, and coercions (Lipari, Cook, Rock, & Matos, 2008). While these events do impact male service members, females have a higher risk of experiencing these events during their service (Murdoch, Pryor, Polusny, & Gackstetter, 2007; Street, Gradus, Stafford, & Kelly, 2007; Vogt et al., 2005).

Military sexual trauma may include sexual assault, sexual harassment and other sexual stressors. Sexual assault includes "experiences of unwanted physical sexual contact that involve some form of coercion, ranging from unwanted touching to attempted or completed rape" (Street et al., 2009) Sexual harassment entails a wide range of behaviors, such as coerced sexual

involvement that may be used in employment related decisions; for example, sexual acts in exchange for maintaining one's position, for attaining a promotion, or to avoid an unfair performance evaluation. This term may also include sexual behaviors that contribute to a hostile, offensive or intimidating work environment. Examples include making repeated offensive comments about a person's sexuality, sexual activity or making unwanted sexual advances (Street et al., 2009).

Between 10% and 30% of female veterans report military sexual trauma (MST), whereas approximately 1% of male veterans report MST during their military service (Kimerling, Gima, Smith, Street, & Frayne 2007; Kimerling, Street, Pavao, Smith, Cronkite, Holmes, & Frayne, 2010; Maguen et al., 2012; Skinner et al., 2000). Such an increased risk may be related to findings that these types of sexual stressors are associated with workplace environments that tend to be male-dominated and characterized by large power differentials between organizational levels, as may be representative of the military culture (Ilies, Hauserman, Schwochau, & Stibal, 2003; Lafontaine & Tredeau, 1986). Moreover, OEF/OIF female veterans often reported that sexual harassment and coercion were commonly tied to promotion opportunities and women who were promoted were assumed to have performed sexual favors for those in charge (Mattocks et al., 2012). Notably, MST has been shown to increase the risk of a range of mental health disorders in OEF/OIF veterans and to have particularly strong relationships with PTSD, especially in female veterans (Kang et al., 2005; Kimerling et al., 2010; Maguen et al., 2012; Scott et al., 2014; Suris & Lind, 2008).

How does sexual assault differ for veterans and civilians? Sexual assault in the military environment appears to place increasing demands on female veteran's mental health and may be related to perceptions that escape is not possible, feelings of betrayal at being victimized

by a fellow service member, and beliefs that reporting will result in negative repercussions (Street, Kimerling, Bell, & Pavo, 2011). Furthermore, experiencing sexual trauma in the context of combat operations may be even more threatening to one's wellbeing, as perceived threats against one's safety are pervasive (Kimerling et al., 2010).

Female veterans may face additional interpersonal stressors, including gender harassment and limited social support. Specifically, 54% of female veterans experience gender harassment annually (Lipari et al., 2008). Research suggests that female veterans perceive gender harassment as a greater problem than sexually-based harassment (Rosen & Martin, 1998). These interactions may also be chronic and represent severe stressors for female veterans. Moreover, the events may be particularly harmful in the context of combat operations, when positive relationships among unit members are critical to maintaining safety of oneself and the entire unit (Street et al., 2009).

Women may experience additional stress while serving, as some evidence suggests that they experience less positive social support than their male counterparts. Among Gulf War samples, females reported lower perceptions of support from their peers and superiors than did male veterans (Rosen, Wright, Marlowe, Bartone, & Gifford, 1999). The perceived lack of social support is a particularly important interpersonal stressor to recognize, as socially supportive relationships among veterans have been identified as a resilience factor against military-related stressors and PTSD (Bliese, 2006; Brailey, Vasterling, Proctor, Constans, & Friedman, 2007; Griffith & Vaitkus, 1999).

Barriers to disclosure and seeking treatment. Military culture also appears to play a role in the veteran's experience of MST and presents barriers to disclosure and seeking care. Military culture emphasizes toughness and stoicism, as well as suppressing emotion in service of

focusing on high-risk tasks (Bell & Reardon, 2011). It also stresses unit cohesion, which may be a critical element in protection and survival. However, when sexual trauma occurs in the context of one's unit, unit cohesion may be disrupted and trust may be broken (Suris et al., 2007). This dynamic is significant, as in times of enemy danger veterans who have been sexually assaulted may be even more vulnerable to perceived threat. These barriers may be compounded by the need to file a restricted or unrestricted report of the trauma in order to receive treatment, as well as concerns about confidentiality and retaliation (Burns, Grindlay, Holt, Manski, & Grossman, 2014). Additionally, veterans may not recognize their experience as sexual trauma, or may have a fragmented memory of the event, which could delay disclosure and treatment seeking further. These barriers may prolong seeking treatment and thus, with limited social support available following MST and the disruptions to unit cohesion and trust, MST may have more detrimental outcomes for veterans than civilians (Scott et al., 2014).

Effects of MST. The effects of sexual trauma are far reaching and may include both physical and psychological symptoms. Physical symptoms include chronic pain, pelvic pain, menstrual problems, chronic fatigue, headaches, and gastrointestinal problems. Psychological difficulties include PTSD, eating disorders, depression, dissociative disorder, personality disorder, substance abuse, and panic disorder (Bell & Reardon, 2011; Suris et al., 2007).

According to the VA's national monitoring data, the diagnoses most commonly associated with MST are PTSD, mood disorders, substance use disorders and psychotic disorders (Makin-Byrd, McCutcheon & Glynn, 2011).

Furthermore, research among OIF/OEF veterans indicates that those with MST are more likely to have at least three comorbid mental health diagnoses (Maguen et al., 2012). Thus, it is critical to acknowledge the physical and psychological impact of MST in an effort to understand how women's military experiences may impact their functioning as individuals and as parents.

> ➢ OEF/OIF female veterans may have experienced multiple traumas over their lifetime, including military sexual trauma (MST), combat, and pre-military trauma.
> ➢ MST includes sexual harassment, unwanted touching, completed rape, and coercions including unwanted sexual demands for special privileges.
> ➢ Different than civilians, female veterans experiencing MST may be unable to escape their hostile environment, experience betrayal by a fellow service member, and may experience disruption in unit cohesion.
> ➢ Female veterans often have limited social support following MST and receiveing treatment may be tied to reporting.

Clinical Points

Chapter 3

Mental Health Issues

Posttraumatic Stress Disorder in Female Veterans

In 2010, the Department of Veteran Affairs indicated that 20% of female veterans who served in Iraq and Afghanistan were diagnosed with Posttraumatic Stress Disorder (PTSD). As women are twice as likely as men to have a lifetime diagnosis of PTSD in the general population, female veterans, particularly those exposed to multiple types of trauma, are especially high risk (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Additionally, experiences of military sexual trauma appear to be a risk factor for developing PTSD, as rates of PTSD among female veterans are nine times more likely when they experience some form of military sexual trauma (Himmerlfarb et al., 2006; Fontana & Rosenheck, 1999). Specifically, in a study by Middleton and Craig (2012) female veterans received a diagnosis at a rate of 19.8%, whereas 40.1% met criteria for PTSD based on screening using the Clinician-Administered PTSD Scale, which suggests that PTSD rates may be much higher than are currently being reported.

According to the current Diagnostic and Statistical Manual (DSM 5), the symptoms of PTSD are organized into four clusters: intrusions, avoidance, negative mood/cognitions and hyperarousal (*see DSM 5 for complete diagnostic criteria*).

Criteria B, cluster 1: Intrusions. The presence of intrusions has been a longstanding trademark symptom cluster of PTSD. Intrusions may appear as distressing dreams, dissociative reactions, psychological distress and physiological reactivity in response to internal or external cues that represent aspects of the traumatic event (Friedman et. al., 2010). Intrusions may also include flashbacks, which are typically experienced as if they are occurring in the present and are further described by those who experience them as vivid and detailed (Whalley, et al. 2013).

Individuals must experience one or more of the aforementioned symptoms to receive a diagnosis of PTSD.

Criteria C, cluster 2: Avoidance. In an effort to cope with intrusive symptoms, individuals with PTSD tend to avoid reminders of the trauma. Avoidance in the DSM-5 focuses on internal reminders and external reminders. Specifically, individuals may avoid or make efforts to avoid distressing memories, thoughts or feeling associated with the trauma, as well as external reminders (people, places, conversations, activities, objects, situations) that elicit distressing memories, thoughts, or feelings about the traumatic event. The DSM-5 indicates endorsement of one or both avoidance symptoms is required for a diagnosis of PTSD.

Criteria D, cluster 3: Negative cognitions and mood. The fourth symptom cluster, negative alterations in cognitions and mood represents a myriad of feelings. These include 1) an inability to remember an important aspect of the traumatic event, 2) persistent and exaggerated negative beliefs about oneself, others or the world, 3) persistent distorted cognitions about the cause or consequences of the trauma that lead to self-blame or blame of others, 4) Persistent negative motional state, such as fear, horror, anger, guilt or shame, 5) markedly diminished interest or participation in significant activities, 6) feelings of detachment or estrangement from others, and 7) persistent inability to experience positive emotions. The DSM-5 posits that individuals must experience two or more of the above to meet criteria for PTSD.

In combat veterans, these symptoms may be influenced by events that led to the violation of their core beliefs, such as witnessing extreme violence, or failing to prevent an ethical transgression (Steenkamp, et. al, 2013). Additionally, veterans may have failed to perform their duties resulting in the harm of others. Moreover, they may have engaged in deliberate cruelty and torture. The concept of moral injury is used to describe the impact of such experiences

behaviorally, psychologically, socially and spiritually (Litz et al., 2009). Moral injury has also been shown to be a significant predictor of future alcohol abuse, anger and relational problems among Iraq War veterans (Maguen et. al, 2010b).

  Criteria D, cluster 3: Alterations in arousal and reactivity. The DSM-5 (American Psychiatric Association, 2013) includes "marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred" as a diagnostic criterion for PTSD. This symptom cluster is broken down into six areas, two or more of which are required for an individual to meet its requirements: 1) Irritable behavior and angry outbursts (with little or no provocation) typically expressed as verbal or physical aggression toward people or objects. 2) Reckless or self-destructive behavior 3) Hypervigilance 4) Exaggerated startle response 5) Problems with concentration 6) Sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep).

  There is a wide range of symptoms that a person can develop in response to a traumatic event. One's unique biological composition, the nature and context of the event itself, and the degree of support following the event all contribute to a person's reaction to trauma and the symptoms that may develop as a result. However, the literature suggests that PTSD risk factors specific to female veterans include MST, pre-military interpersonal trauma, and particular demographics (i.e. age and socioeconomic status).

Risk Factors for Developing PTSD

  Military sexual trauma. Women often experience MST in the context of other types of trauma exposure, such as combat, placing them at increased risk for mental health problems (Scott et al., 2014; Smith et al., 2008). It is plausible that both combat and sexual trauma contribute independently to poor mental health. Consequently, experiencing both types of trauma

could then potentially a greater negative impact on mental health than would exposure to a single type of trauma (Street et al., 2009). Specifically, veterans who experience MST in addition to various types of trauma are at an increased risk for PTSD during and after deployment (Suris et al., 2007). Women who experience MST are 4-9 times more likely to experience symptoms of PTSD compared to those without a history of sexual assault (Himmelfarb, Yaeger, & Mintz, 2006; Maguen et al., 2012; Turchik & Wilson, 2010).

Contributing factors include the aforementioned culture of the military and manner in which the trauma is addressed. Such factors are significant, as evidence suggests that negative social reactions contribute to PTSD symptoms (Littleton, 2010; Ullman et al., 2007), although positive social reactions do not appear to protect against PTSD. Moreover, experiencing physical violence during the assault is a strong predictor of PTSD symptoms, which may be related to subjective feelings of perceived life threat (Zinzow et al., 2010).

The far-reaching impact of MST necessitates clinicians working with female veterans and/or their children to have a working knowledge of military culture and its impact on sexual trauma. Clinicians should be aware of stigma and career concerns associated with seeking care. Nevertheless, clinicians have the opportunity to provide a level of support that that veterans may not have received elsewhere, which could potentially be a protective factor in developing mental health problems (Ullman, 1999). Thus, with an awareness of these issues, clinicians can aid in recognition of MST, provide psychoeducation, encourage utilization of appropriate treatment, and buffer against the long-term deleterious effects.

Pre-military interpersonal trauma. While exposure to trauma while serving in the military increases the risk for poor mental health outcomes in female veterans, exposure to multiple types of trauma across the lifespan, including childhood- and adult-onset traumas, has

also been shown to increase one's risk for trauma related symptoms (Breslau et al., 1999). Thus, the picture of female veteran's mental health is further complicated by the fact that over half of the population of female veterans reports experiencing pre-military physical or sexual abuse (Zinzow et al., 2007b). Notably, approximately one third of female veterans have experienced pre-military child sexual abuse, increasing their vulnerability to additional trauma and the potential to exacerbate military trauma (Boucher, 2014; Kimerling et al., 2010).

Such a vulnerability may be related to difficulty accessing resources, such as coping skills, social support, housing, and employment, which are all protective factors (Hobfoll, Dunahoo, & Monnier, 1995). These resources may become depleted or unavailable over the course of multiple traumas. As research suggests that those exposed to multiple types of trauma are at risk for development PTSD, female veterans may be especially high risk (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Specifically, individuals with unresolved childhood trauma are 7.5 times more likely to be diagnosed with PTSD after experiencing a traumatic event later in life (Stovall-McClough & Cloitre, 2006).

Female veterans may also be at risk for intimate partner violence (IPV) by male veterans, as they are five times more likely to be married to other service members than civilians (Joint Economic Committee, 2007; Marshall, Panuzio, & Taft, 2005; Rentz et al., 2006). As previously noted, experiencing various types of trauma throughout ones life is a risk factor for PTSD, thereby highlighting the salience of this statistic.

Age. Younger age is also a risk factor, which is significant for female veterans, as 47.3% are under age 30 (Haskell, 2010; Schlenger et al., 2002; Trautman et al., 2002). Furthermore, military mothers are more likely to be single, under age 25 and come from lower socioeconomic backgrounds, placing additional stress on them (Cohen et al., 2012).

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│                        PTSD RISK FACTORS                              │ │          │
│  ➤ Female veterans are at risk for exposure to multiple types of      │ │          │
│    trauma, including childhood abuse, MST, and combat exposure and    │ │ Clinical │
│    are therefore at elevated risk for developing posttraumatic        │ │  Points  │
│    stress symptoms.                                                   │ │          │
│  ➤ A history of trauma may reduce access to protective resources,     │ │          │
│    such as coping skills, social support, housing, and employment.    │ │          │
│  ➤ Experiences of intimate partner violence                          │ │          │
│  ➤ Demographics: Military mothers are likely to be single, under      │ │          │
│    age 25, come from lower socioeconomic background                   │ │          │
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Post-deployment Mental and Physical Health

Research indicates that women may be more likely to present with specific PTSD symptoms, such as psychological reactivity to trauma cues, startle response, restricted affect, depression and avoidance of trauma cues. Female veterans diagnosed with PTSD also have a higher rates of psychiatric disorders compared to the general population, which may include depression, panic, eating disorders, substance abuse and being victims of domestic violence (Dobie el al., 2004; Haskell et al., 2010; Kimerling, Gima, Smith, Street, & Frayne, 2007). Additionally, veterans with PTSD are more likely than members of the general population to have clinically significant levels of depression, anxiety, anger, and violence and are more likely to abuse substances and less likely to hold steady employment (Kessler, 2000; Taft et al., 2005).

In an effort to avoid or escape emotional intensity, those struggling with symptoms of trauma may turn to substances to cope. While such avoidant coping can initially protect women from experiencing the immediate distress of the trauma, they thwart recovery in the long-run and thus maladaptive coping strategies are related to more PTSD symptoms (Ullman et al., 2007; Gutner et al., 2006). Female veterans are also more likely to present with somatic complaints and increased levels of obesity, fibromyalgia, irritable bowel syndrome, emphysema, and

sexually transmitted disease, increased rate of high blood pressure, stroke, and diabetes (Dobie et al., 2004; Dobie et al., 2006).

Additionally, injuries sustained during deployment, with or without a diagnosis of PTSD, may also contribute to difficulties with reintegration (Gewirtz et al., 2010). Deployment related injuries include but are not limited to TBI, spinal cord injuries, musculoskeletal injuries, amputations, burns, disfigurement and visual impairment (Department of Defense, 2010). While there is limited literature on the impact of TBI on military families, review of civilian literature reveals that parents with head injuries are at high risk for treating their children poorly or unintentionally neglecting them (Perlesz, Kinsella, & Crowe, 1999). Additional civilian studies indicate that children report feelings of loss and grief at the change in the injured parent (Butera-Prinzi & Perlesz, 2004). However, it appears that various factors may play a role on the impact of TBI on family functioning, such as severity, chronicity of symptoms, degree of change in functioning and family routines, among others. However, clinicians should consider that the emotional impact of an injury, including symptoms of trauma or depression may be more impactful on relationships and parenting than the physical impact.

Part II: THE IMPACT OF ATTACHMENT

Chapter 4

Breach of Attachment from Children

In addition to deployment related stressors, such as combat, MST and difficult work environments, female veterans' stressors often include concerns about family disruption during the deployment cycle. With longer and more frequent deployments since 9/11, today's military families face the repeated stressors of relocation, separation and reunification (Osofsky & Chartrand, 2013). Common to military families are frequent moves, changing schools, friends and communities in different states or even countries (Lester & Flake, 2013). With an average move every 2-3 years, military families may experience difficulty establishing a sense of belonging to a community (Lester & Flake, 2013). However, it is notable that children of Active Duty service members will move six to nine times over the course of his/her school career (Department of Defense Education Activity, 2013). Thus, it is common for military families to move closer to extended family when a service member parent is deployed (Lester & Flake, 2013). Lester & Flake (2013) suggest that even families who don't move, may experience a sense of isolation, as they may lack relationships with others having similar experiences.

As service members prepare for deployment, they complete a Family Care Plan, which includes plans for childcare during deployment. Parents of the service member are more likely than any other family member to be asked to provide care full-time or for an extended period of time (Bunch, Eastman, & Moore, 2007; Cozza et al., 2005). However, grandparents may be psychologically or physically overwhelmed by taking on the role as a primary caregiver (Bunch et al., 2007). Additionally, for dual service member or single parent families, childcare plans may include a substitute caregiver. However, these caregivers may be unfamiliar with the

emotional needs of the child, and may differ in routines, beliefs, and values and may also have their own physical or emotional limitations (Drummet et al., 2003).

Deployment may be particularly significant for female veterans and their children, as it separates children from their mother. Though the gap in household responsibilities continues to shrink, women continue to have more responsibility for childcare and are most commonly a child's primary attachment figure (Bianchi, Milkie, Sayer, et al., 2000). Rising divorce rates for female service members' places added stress on women who must find alternate arrangements for childcare during deployment (Adler-Baeder, Pittman, & Taylor, 2006). Thus, it is not uncommon for children of single mothers to move in with other relatives (Kelley et al., 2002). Deployment has been found to be particularly stressful for single parent families, as well as dual career families due to difficulty making child care arrangements (Huffman & Payne, 2006; Kelley, 2006).

These often disruptive transitions may be more profound for Guard and Reserve members who are primarily utilized in the civilian sector, as deployment involves transitions to and from their usual jobs, prolonged departure from their families, and less social support from their home communities as compared to active duty personnel living on a military base (Foster, 2011). OEF/OIF veterans who participated in the Women Veterans Cohort study (WVCS) discussed the challenges of having dual roles as a service member and mother to a young child. Multiple veterans who left for Iraq or Afghanistan for over a year spoke about the difficult decisions about with whom to leave their children during deployment (Mattocks, et al., 2012). With such great responsibility for childcare, it is not surprising that female service members often report feelings of guilt when deploying rather than experiencing the sense of duty that males often have reported (Hall & Wensch, 2008).

The challenges associated with deployment may be particularly taxing on young children due to their emotional and cognitive immaturity, lack of coping skills and dependence on their caregivers for daily functioning (Osofsky & Chartrand, 2013). With a significant portion of military children under the age of 5, deployment may occur during critical periods of developing attachment security (Stovall-McClough & Cloitre, 2006). Upon deployment, it is not uncommon for children to worry that the deployed parent may return injured or that he or she may not return at all (Lester & Flake, 2013). Such concerns may threaten a child's sense of security in the primary caregiving relationship. As the attachment system is the foundation of safety, fear and emotion regulation, the separation that occurs between parent and child during the deployment process may threaten the child's sense of security and thereby has the power to shape children's expectations of their caregiving relationships, and their sense of safety. Subsequently, this breach of attachment has the potential to contribute to anxiety, behavioral and emotional problems (Lester & Flake, 2013; Osofsky & Chartrand, 2013). While children's reaction to parental deployment varies by age, the longer and more frequently a parent is deployed, the greater the psychological, health and behavioral risk for the child (Lester & Flake, 2013).

Chapter 5

Wired for Love

Introduction to Attachment Theory

Nevertheless, in order to understand how the change, disruption, stress and loss of deployment affects young children, it is first necessary to review the foundation of healthy attachment (Lester & Flake, 2013). Originating with the seminal work of John Bowlby in the 1960's, this theory has since expanded by various psychologists. Attachment theory describes the process by which children develop a sense of security from their early interactions with their caregivers with a specific focus on how the parent or caregiver provides a sense of safety and protection in the context of threat (Lester & Flake, 2013). These early interactions with the caregiver develop a child's capacity for self-regulation and the parent's ability to move the child from dysregulated to regulated states is a primary predictor of attachment security (Cozolino, 2012; Lester & Flake, 2013). Secure attachment is developed through consistent and sensitive caregiving, as well as physical and psychological accessibility.

Attachment security safeguards children and their developing brains against physiological and psychologist stress responses in early childhood (Gunnar, 1998). The quality of attachment bonds influences aspects of a child's personality and independence, the formation of effective peer relationships and positive transitions to school (Lester & Flake, 2013). Furthermore, secure attachment contributes to cognitive, emotional, social and physical growth throughout childhood and into adulthood (Cozolino, 2012).

In contrast, insecure attachment is characterized by inconsistent or unavailable caregiver response (Ainsworth, Blehar, Waters, & Wall, 1979). Children with insecure attachment, specifically disorganized attachment, tend to have more difficulty regulating their emotions and have an increased risk for psychological problems throughout their lives (Lyons-Ruth, 1996).

Humans are profoundly influenced by their experiences and early relationships due to the impact on the brain. Neuroscience research suggests that the human brain is highly social in nature, meaning that social relationships shape the brain, which in turn shapes relationships. The concept of shaping is referred to as *experience-dependent plasticity*, meaning that these early relationships, in combination with our genetic inheritance structure, restructure our neural networks. With 70% of brain development occurring after birth, much of which comprises the brain's capacity to self-regulate, attachment relationships appear to have a strong link between brain development and interpersonal relationships (Cozolino, 2006; Siegel, 2012). As such, targeting female veterans with very young children appears to be paramount to prevention and early intervention for attachment issues that may result from separation during deployment.

Nevertheless, the plasticity of the brain, also suggests that experiences that are both positive and negative have the ability to alter the structure of the brain. The implications of this are that clinicians can harness the brain's plasticity in order to support attachment security and wellbeing, as well as rewire the structure of the brain towards more adaptive functioning if necessary (Siegel, 2012).

Maternal Priming for Infant Bonding and Attachment

"Those who are nurtured best survive best" (Cozolino, 2012 p. 16).

But why do we have attachment relationships? Evolutionarily, infants and mothers gravitate towards each other for survival. Referencing the nomadic nature of primates, with

whom we share our ancestry, the absence of a fixed safe place highlights the functional importance of retreating to a fixed safe person to increase chances of survival (Hesse & Main, 1999). This means of survival translates into biological changes in the mother and behaviors exhibited by the infant, which in turn stimulate maternal behavior to join mother and child. Such attachment behavior begins with mother during the third trimester of pregnancy when mothers experience maternal preoccupation. This consists of becoming attuned to visceral and emotional stimuli in preparation for attuning to their newborn child's needs. This state of preoccupation is associated with biological changes, specifically a shift to right hemisphere bias in the mother's brain (Cozolino, 2012). This shift is significant, as the right hemisphere is responsible for emotion, bodily experience, and autonomic processes.

Following childbirth, new mothers exhibit a heightened sensitivity to interpersonal cues from their babies, designed to increase the bond between mother and child. The brain's right hemisphere is an integral component of attachment, affect regulation and social relationships. The neural networks in the right hemisphere are built through attunement of the caregiver's right hemisphere with the child's and is achieved through attachment behaviors displayed by the child. Thus, the biological changes in the mother that enhance attunement foster proximity between mother and child, and ultimately promote a sense of safety for the child (Cozolino, 2012).

MATERNAL SHIFTS IN THE BRAIN	
➢ Mothers experience neurobiological changes in preparation for attuning to their newborn child's needs. ➢ In the third trimester of pregnancy, mothers experience *maternal preoccupation*, where they become attuned to visceral and emotional stimuli. This is associated with a shift into the right hemisphere bias. ➢ The right hemisphere is responsible for emotion, bodily experience, and autonomic processes. It is also important for social relationships, affect regulation, and attachment.	Clinical Points

The process of bonding and attaching are initially modulated by the reward circuitry of dopamine and neuropeptides, such as oxytocin, and vasopressin prior to being regulated by social interactions (Cozolino, 2012). Specifically, attachment between mother and child is modulated by oxytocin, which inhibits aggressive and irritable behavior while stimulating maternal behavior, thus promoting trust. Oxytocin has been found to be produced and released in the amygdala, a brain structure responsible for activating the fight-or-flight response, and plays a role in regulating stress, fear and anxiety (Jankowski et al., 1998; Marazziti et al., 2006; Neumann, 2007).

Infant Behaviors that Promote Proximity and Bonding

Similarly, to increase their chances of survival, infants exhibit certain behaviors designed to attain proximity and trigger maternal behavior (Cozolino, 2012). Examples of infant attachment behavior include prolonged eye gaze, physical contact, rooting reflex, hand grasp, reaching out of the arms, orienting their head towards the sound of mother's voice, social smile and seeking out round shapes, such as the mother's face. (Cozolino, 2012; Hart, 2006). Additionally, infants demonstrate a preference for the mother's face, which is a brainstem reflex, and is means of ensuring an imprinting process that maximizes chances of survival (Cozolino, 2012). These attachment behaviors are linked to biological processes, including the opioid and the dopamine reward systems, which relate to feelings of pleasure, safety and happiness, in both the child and mother when proximity is achieved. Thus, when the child is separated from the mother, dopamine levels decrease, leading to a state of distress where the child may become anxious or exhibit behavior to increase proximity and safety. Thus, the mother's sensitivity to these cues coupled with the infant's attachment behavior system functions to link the mother and child in order to ensure attachment and ultimately, survival.

However, when the mother is not physically or emotionally available, such as during and potentially following deployment, children could potentially experience persistent distress. Of course, protective factors exist, such as the availability of another caregiver to regulate the child, or an established internal sense of the mother, which will be covered in later chapters.

Maternal Sensitivity and Infant Communication

"At the core of attachment for human infants is the regulation of emotional experience, including the experience of fear" (Carlson, 1998 p. 1107).

While both parent and child are in theory biologically equipped to link up in a reciprocal dance of attachment behaviors, the ability for a parent to attune to the child is highly dependent on his/her sensitivity. Specifically, the caregiver's ability to perceive the child's communicative signals, interpret their meaning and respond in a manner that meets the child's internal needs is paramount to developing secure attachment and a healthy nervous system (Hart, 2006). "The infant's first exposure to the human world consists simply of whatever his mother actually does with her face, voice, body, hands. The ongoing flow of her acts provides for the infant his emerging experience with the stuff of human communication and relatedness. The choreography of maternal behaviors is the raw material from the outside world with which the infant begins to construct his knowledge and experience of all things human" (Stern, 1977 p. 23).

Mother and child also engage in a process of *imitation*, whereby the child is affected by the caregiver's gestures, mimicry or movement and the infant responds in a corresponding manner. Such imitation requires the caregiver to be attuned with the child's expression, which teaches the child the types of responses their expressions elicit. Without this imitation process, the child will be unable to perceive a link between their behavior and the caregiver's response (Hart, 2006). Notably, the fundamental ability to imitate is the biological foundation for the later

development of understanding others, empathy and the ability to mentalize (Hart, 2006).

Additionally, caregiver and child engage in nonverbal dialogue and interactions, known as

protoconversations, which are initiated by eye contact, vocalization, and gestures.

Protoconversations are external expressions of the child's internal emotional experience (Hart,

2006). Nevertheless, mutual engagement in both imitation and protoconversations can only occur

"when neither the infant nor the caregiver is distracted, nervous or under pressure." Such

conditions illuminate potential difficulties of female veterans who may have unresolved stress,

trauma, depression or anxiety, in mutually engaging with the child.

Communication of Safety

In addition to the mother's interpretation of signals, beginning at just 8 weeks of age,

children can visually perceive the caregiver's facial expression due to the development of the

occipital cortex, known as the visual processing system. These perceptions are linked to the

developing *limbic system*, which is responsible for our emotions, drives and memory formation

and is directly connected to our need for attachment relationships (Siegel, 2012). Around 2-6

months old, the limbic system becomes more active, enabling the child to experience fear and

anger and regulate emotions through interactions with the caregiver, such as eye gaze (Hart,

2006). Eye gaze has been linked to the development of self-regulatory capacity and sense of self.

Specifically, large pupil size appears to communicate positive feelings and expresses the

caregiver's interest in the child (Cozolino, 2012).

Conversely, averted eye gaze by the caregiver can be perceived by the child as rejection

and can activate feelings of low sense of self, decreased relational value, and aggressive impulses

against the parent who is looking away in an attempt to regain proximity (Wirth et al., 2010).

These biological developments that underlie social development are highly significant, as they

are the building blocks of a child's sense of safety. Again, in context of the evolutionary function of the attachment system, non-loving or threatening messages essentially communicate that the child is not fit for survival and consequently, the child's brain may become shaped in ways that do not support long-term survival.

As children develop, they utilize caregivers' facial expressions to monitor safety and danger while exploring their environment. But what happens in the brain when an infant experiences a face as threatening? This process activates the rapidly-assessing amygdala, located in the limbic system and the brain releases a hormonal cascade in preparation of survival (Adolphs et al., 1994; Adolphs et al., 1995; Hamann et al., 1996; Young et al., 1995). While useful in the short-term for survival, this release of glucocorticoids, which are released in times of stress can limit brain growth and socioemotional development, as well as kill cells in the brain's memory center if stress is experienced over long periods of time (Cozolino, 2012; Marsh et al., 2007). Thus, if a caregiver represents both survival as well as a threat, the child's attachment system, and subsequently their capacity for empathy, mentalization, and secure relationships in the future, is negatively impacted on both an emotional and physical level.

> **NEUROANATOMY & SAFETY**
> ➢ *Occipital cortex*: The visual processing system that develops at 8 weeks of age allows children can visually perceive the caregiver's facial expression.
> ➢ *Limbic System:* responsible for our emotions, drives and memory formation and is directly connected to our need for attachment relationships; also connected to the occipital cortex. Contains the rapidly-assessing amygdala that releases glucocorticoids when it detects threat.
> ➢ *Caregiver eye gaze and facial expressions:* Used to regulate infants' sense of safety and fear, as well as communicate sense of worth.

Clinical Points

The visual information that infants perceive from signals, such as parental eye gaze, communicates closeness, safety or danger (Freire, Eskritt, & Lee, 2004; Kleinke, 1986). Gauging the relative safety or danger of the environment through visual information becomes even more significant when considering a parent with psychological distress. For example, caregivers struggling with anxiety or unresolved trauma may express more messages to their child that their world is unsafe than those without a history of trauma or anxiety. Specifically, veterans with symptoms of trauma are often observed to check perimeters, keep watch, be overly protective about family and friend's safety, and scan for exits and threats in crowds. The interpretation of such signals thus not only has the potential to impact a child's sense of safety, but also a child's sense of self, as children's self-image is constructed through how the caregiver perceives the child (Hart, 2006). Therefore, the linkage of the occipital cortex and limbic system in evaluating the safety of the world based on the female veteran's expressions has implications for the development of her child's view of the world, self-image, and later relationship functioning.

In addition to nonverbal expression of safety, danger and love in the world, caregivers attune to the child's affective experience through *affective mirroring*, using vocal and facial expressions to match the child's emotional state. "Through the repeated experiences of attuned dyadic interaction with the mother or primary caregiver, the child becomes increasingly effective at signaling, engaging and responding to the other, even prior to the use of words" (Brazelton, 1989; Schore, 1994; Siegel, 1999; Stern, 1985). Thus, the initial basis of the attachment relationship is founded on the caregiver's ability to consistently attune to the child's bodily states and needs through sensorimotor interactions, reinforcing the reciprocal effect of their interactions with their environment (Ogden, Minton & Pain, 2006). Moreover, affective mirroring and attunement communicate to the child that he/she is seen and felt. These messages contribute to

the child's sense of safety within the attachment relationship by increasing their sense of being understood and effective in their environment (Hart, 2006). Thus, as clinicians working with veterans and their children, consideration must be given to factors that may impede affective attunement, as well as means to enhance it.

Chapter 6

Attunement

Attunement and the Developing Nervous System

Children develop their ability to regulate arousal and affect within the context of the attachment relationship. The combination of the caregiver's nervous system with a caring and attuned environment provides a foundation on which self-regulation can develop (Damasio, 1998; Schore, 2003; Stern, 2004). Thus, in addition to communicating to the child that he/she is seen, felt and safe, affective mirroring and attunement by the female veteran can aid their child in modulating arousal of their nervous system (Beebe & Stern, 1977; Brazelton, Koslowski, & Main, 1974; Stern, 1977).

Specifically, a child's ability to modulate the arousal and stimulation of their nervous system is dependent on the caregiver's ability to perceive or attune to the child's signals (Beebe & Stern, 1977; Brazelton, Koslowski, & Main, 1974; Stern, 1977). The interactions of play and laughter enable the infant's developing nervous system to manage higher states of arousal (Hart, 2006). Thus, children rely on their primary caregiver's more mature nervous system to alter their internal state and arousal level to match that of the caregiver (Hart, 2006).

This reciprocal relationship fosters the development of the orbital prefrontal cortex, which is a fundamental element in self-regulation (Brazelton, 1989; Emde, 1989). Of particular importance, this structure's function primary period of development occurs during infancy, during which new emotional experiences occur (Schore, 1994, 1997). Furthermore, the caregiver's capacity to affectively attune to the child's internal experience is paramount in developing a child's ability to understand others and develop empathy (Hart, 2006). Thus, the patterns of interaction developed during early childhood years are highly significant.

While the development of affect regulation requires attuned and consistent interactions, a sense of security is attained not through perfect attunement, but through the intention for connection and repair when a miscommunication inevitably occurs (Siegel, 2012). As a result, clinicians can aid veterans in recognizing instances of miscommunication and facilitate a repair process in service of maintaining healthy attachment (*See Section IV on Conflict and Parenting).*

Neural Benefits of Attuned Interactions

Of note, attuned communication between the caregiver and child fuels production and growth of fibers that integrate the left and right hemispheres of the brain. Integration of these two hemispheres directly contributes to the nervous system's ability to balance and regulate (Siegel, 2012). The right hemisphere is responsible for nonverbal communication, visuospatial skills, stress-response mediation, autobiographical memory and an integrated map of the whole body. The later developing left hemisphere is involved in linear, logical and linguistic skills.

Other neural networks associated with regulation and the attachment system include the basal forebrain network and the default mode network (DMN). The basal forebrain is responsible for mediating emotional and visceral responses based on past learning, utilizing the amygdala, anterior insula, anterior cingulate cortex, and orbital medial prefrontal cortex (OMFC) (Hariri et al., 2000; O'Doherty et al., 2001; Price et al., 1996; Tremblay & Schultz, 1999). As both the social brain networks and fear circuitry share the amygdala, relationships and modulation of fear become the same (Panksepp, 2001).

The default mode network, which is activated in the absence of external stimulation, is related to our experience of self and others. Thus, the basal forebrain and the DMN work together to help us be aware of ourselves and imitate the experiences of others within ourselves, serving as the structures for emotional resonance, attunement and empathy.

ATTACHMENT CIRCUITRY

➢ The *right hemisphere* is responsible for nonverbal communication, visuospatial skills, stress-response mediation, autobiographical memory and an integrated map of the whole body.

➢ The later developing *left hemisphere* is involved in linear, logical and linguistic skills. Integration of these two hemispheres directly contributes to the nervous system's ability to balance and regulate.

➢ *The basal forebrain* is responsible for mediating emotional and visceral responses based on past learning, utilizing the amygdala, anterior insula, anterior cingulate cortex, and orbital medial prefrontal cortex.

➢ *The default mode network* is activated in the absence of external stimulation, and is related to our experience of self and others.

Clinical Points

Thus you can see how a child who lacks affective attunement from her caregiver has the potential to replicate these patterns in her own relationships. Subsequently, clinicians working with veterans and their children are uniquely positioned to intervene at these critical developmental junctions in order to promote healthy functioning of the individual and her future relationships.

Neuroception

One of the key features in assessing safety is the ability to accurately perceive the presence of threats within one's environment. However, this is not always a conscious process. The term *neuroception* describes the neural circuitry, stemming from subcortical structures, that function outside of conscious awareness to detect threats in the environment (Porges, 2003). These circuits are constantly running in the background and serve to trigger defensive reactions (i.e. fight or flight responses) if a threat is perceived. The neural circuits that control one's perception of danger are influenced by interactions with one's environment throughout childhood and can be significantly impacted by traumatic events (Porges, 2003). If the circuitry surrounding this process is altered, cues regarding threat or safety can be misperceived and

therefore limit the ability to find security or balance within their world. This process has implications for both the female veteran and her child, as service related stress and trauma may heighten arousal and contribute to continually feeling on edge and unsafe, which subsequently is transmitted to her child.

Obstacles in Attunement

Children rely on their caregiver's emotional regulation to regulate their own internal states, such as maintaining arousal at an optimal level or re-regulating if they become hyperaroused (Ogden et al., 2006). Such emotional attunement promotes the communication and transfer of the caregiver's right hemisphere, as the caregiver brings their own history into the interaction and the child's development takes place within that relationship (Hart, 2006). Thus, affective attunement is directly linked to affect regulation. Moreover, children use attunement with the caregiver to alter their internal state and arousal level to match that of the caregiver (Hart, 2006). As such, clinicians should consider the ability of the female veteran to regulate her own internal states, with a particular focus on hyperarousal that is commonly seen in returning veterans.

The implications of these reciprocal processes are that attachment figures with unresolved stress or trauma may unconsciously communicate their dysregulated internal states to their children. As children rely on the caregiver's emotional regulation to regulate their own internal states, it is plausible that female veterans with unresolved trauma will unconsciously communicate their dysregulated emotional world to their children. Such unconscious communication shapes the developing brain, and subsequent personality development, behavior and belief systems (Cozolino, 2012).

Additionally, the ability of the caregiver to affectively attune to the child's internal experience is paramount for the development of a child's ability to understand others and develop empathy, again having implications for future interpersonal relationships (Hart, 2006). Conversely, ruptures in attunement can create emotional instability in the child, leaving them feeling disconnected and longing to reconnect with the caregiver (Siegel, 2012). Ed Tronick demonstrated this notion in the Still-Face Experiment involving a four-month-old infant interacting with his caregiver (Siegel, 2012). Specifically, when the caregiver stopped responding in an attuned manner by exhibiting a still face, the child became agitated and attempted to re-establish connection using a variety of strategies. When these attempts failed, the child turned to self-stimulating behavior in an effort to self-regulate. Thus, the child's state of being is highly dependent on responsive signals from the caregiver to maintain emotional regulation (Siegel, 2012).

While it is near impossible to be attuned to one's child 100% of the time, patterns of misattunement or complete lack thereof have consequences for child development. Specifically, a caregiver who does not attune to certain emotions can keep the child from developing an integrated and organized nervous system, resulting in self-regulation difficulties (Hart, 2006). Moreover, if the caregiver fails to attune with the infant and instead corrects the child through exaggerated misattunements, the child is left with a feeling of being wrong and unloved (Hart, 2006). Such patterns can leave a child feeling emotionally isolated with difficulties regulating emotions later in life (Tronick et al., 1998). Of importance, if reparations of misattunements occur, such experiences help the child in handling future stressful situations, as the child develops the expectation of being relieved of their distress by the caregiver, aiding in the sense of being able to cope with negative emotions. Thus, clinicians can play an important

role in helping parents develop the necessary tools to recognize when a misattunement has occurred and engage in a repair process in order to strengthen secure attachment.

The Internalized Mother

Developing healthy affect regulation requires the internalization of experiences of soothing touch, being held gently and securely, comforting warmth, balanced sleep, hunger, stimulation, and a sustained positive emotional state (Cozolino, 2012). When these experiences of resonant and attuned interactions develop into patterns, children develop an internalized sense of their caregiver. Additionally, experiences of being moved from dysregulated to regulated states by the caregiver become internalized and foster a sense of being able to cope with negative emotions. Such an internalized capacity later translates into the ability to self-soothe (Cozolino, 2012; Hart, 2006). Therefore, as the neural structures responsible for self-regulation mature through attuned and interactive regulation, the child moves from dependence on the caregiver for regulation to an internalized regulation ability (Schore, 2001).

While this chapter has highlighted infancy and childhood as a critical period for neurobiological development, it is important for clinicians and parents alike to understand that these early experiences are not consciously accessible as they are stored in implicit memory systems. As the hippocampus which houses conscious memory is early in development at a young age, the emotional, somatic and visceral memories that arise from repeated early experiences form an "internalized mother" around 5-6 months of age and the summation of these experiences forms an attachment schema. The attachment schema, stored in implicit memory, is composed of the affective state or how the child feels while interacting with the caregiver, as well as memories of interactions with others (Hart, 2006). The attachment schemas serve as templates for being with others, and consequently aid children in adapting to their environment

by helping them form expectations, adjust their interactions and control future exchanges (Cozolino, 2012; Hart, 2006).

The internalized mother shapes the neural infrastructure of implicit memory, thus serving as the emotional backdrop for psychological, biological and behavioral structures, the child's expectations of relationships, the world and the future (Cozolino, 2012). Within implicit memory, interactions with caregivers become associated with feelings of safety and warmth or anxiety and fear (Cozolino, 2012). These attachment schemas become activated in interpersonal interactions. They determine whether an individual seeks or avoids proximity with others, as well as their ability to utilize interpersonal connection for emotional and physiological equilibrium.

Due to their influence on affect regulation, attachment schemas also become visible when under stress. When a schema is activated, it infiltrates our present experiences and interactions based on predictive reflex prior to conscious awareness (Nomura et al., 2003). This unconscious process can be attributed to the fast-processing nature of the amygdala, which bypasses the frontal lobe and alerts to us potential danger prior to conscious processing. The role of the amygdala is ultimately to guide us towards what is life-sustaining and avoid what has been proven to be life-threatening. Thus, the amygdala links our present experiences with evaluations from the past and directly influences our emotional reactions and behaviors (Cozolino, 2012). However, one can imagine that while this process may enable an individual to survive an abusive or neglectful childhood environment, it may be less adaptive and interfere with functioning in other environments or with relational functioning the future.

Those with positive attachment schemas demonstrate an enhanced biochemical environment in the brain for regulation, growth and immunological functioning (Cozolino, 2012). Conversely, when secure attachment is not formed the child may lack a sense of safety and may demonstrate impairments in age-appropriate behavior, such as curiosity and social interaction (Hart, 2006). This may stem from parental signals that discourage exploration, curiosity and taking chances. Moreover, those with negative attachment schemas have an increased likelihood of emotional and physical illness, as well as decreased concentration of cells in the hippocampus, likely due to neurotoxic levels of sustained cortisol (Quirin et al., 2010).

Schemas also influence the romantic partners we choose, the nature of our relationships, the experience of self, our emotional world, and the way we parent later in life. Research indicates that children who experience deficient early parenting are more likely to associate with an uncaring romantic partner and therein lies potential for intergenerational transmission of diminished affection regulation and interpersonal functioning (Barrett, Hickie & Parker, 1992; Beckwith, Cohen & Hamilton, 1999). Thus, providing resources to female veterans, particularly during critical childhood developmental periods is paramount in supporting healthy emotional and physical functioning, as well as interpersonal relationships for their children.

Chapter 7

Attachment Styles

Attachment Styles

When working through an attachment lens, clinicians should consider the classification of attachment between veteran and child. John Bowlby believed attachment patterns to be established by age three and found them to be moderately stable throughout one's life (Holmes, 1993; Scharfe & Bartholomew, 1994). These patterns are reinforced as new information about the environment is filtered through previously developed attachment schemata; thus, contributing to the long-lasting and cyclical nature of attachment patterns. Following in John Bowlby's footsteps, Mary Ainsworth and Mary Main identified four patterns of attachment stemming from their research on parent-child interactions. These attachment styles were labeled as *avoidant-resistant, ambivalent, disorganized* and *secure* (Hart, 2006).

As previously noted, when a child receives the necessary attunement, empathy, and general security from their primary caregiver, they will develop a secure sense of self and an internal working model that allows them to appropriately regulate their affect and interactions with others (Holmes, 1993). Securely attached children have internalized their mothers as a source of comfort, as they trust in and are willing to depend on them to feel safe while they are still able to seek stimulation elsewhere (Stern, 1995). Thus, children with secure attachment are more likely to see the world as safe to explore as they develop into adults. In adulthood, these children are able to seek proximity to others and use social relationships to tolerate distress and disappointment (Cassidy & Shaver, 1999).

On the other hand, when early childhood experiences were defined by a caregiver's inability to adequately attune to the child's needs or provide a stable sense of safety and security, children develop insecure attachment. This style includes avoidant-resistant, ambivalent, and disorganized attachment (Main, 2000). Generally, insecurely attached children view the world as unpredictable and dangerous and children maintain very little control over their emotions or relationships in their lives (Bartholomew & Horowitz, 1991).

Research indicates that infants with avoidant-resistant attachment styles have been raised in environments where the caregiver demonstrates a dismissive and rejecting parenting style, which teaches them to dismiss their own needs for affection or attention (Hart, 2006; Siegel, 2012). Subsequently in adulthood, these same individuals tend to minimize their own negative experiences, have a poor ability to express emotion, and a limited and seemingly selective memory of childhood and past relationships (Sable, 2007).

Children with an ambivalent attachment style have been found to have a caregiver who inconsistently demonstrates attunement or may even communicate in an intrusive or enmeshed manner. Such interactions leave the child without the ability to appropriately regulate or stabilize their emotional experiences (Hart, 2006; Siegel, 2012). In adulthood, these individuals have difficulty expressing a coherent narrative of their past, managing their impulsivity and frustration, and become emotionally preoccupied with their history (Beckwith, Cohen, & Hamilton, 1999; Hart, 2006).

Finally, disorganized attachment is characterized by caregivers that are frightening, threatening, unpredictable, and unable to meet the child's physical needs, leaving them "fearful without resolution" (Siegel, 2012, p. 125). Caregivers in this category may ignore or not see the child's needs; thus it is not uncommon for these environments to be characterized by abuse or

chronic neglect. Caregivers also fail to regulate the child's affect by either overstimulating or understimulating the child without any repair, resulting in prolonged periods of intense negative emotional states. Children with this attachment style display disorganized and contradictory behavior, which can be understood as the simultaneous activation of two opposing systems: attachment and defense (Liotti, 1999, Lyons-Ruth & Jacobvitz, 1999; Main & Morgan, 1996; Ogawa, Sroufe, Weinfield, Calson & Egeland, 1997).

Consequently, "It appears that the chaos of the mothers' internal world can be witnessed in the child's behavior even when it is not evident in the behavior of the mother" (Cozolino, 2012, p. 119). This attachment style may be of particular importance when considering female veterans, who may have unresolved trauma or grief, and may experience regulatory instability. Specifically, frightening behavior on the part of a mother, regardless of her attachment style, can result in disorganized types of behavior in children (Schuengel, Bakersmans-Kranenburg, & Van Ijzendoorn 1999). In adulthood, these individuals exhibit poor emotional regulation, an inability to react or manage their internal experience during stressful situations, and may also demonstrate symptoms of dissociation (Buchheim & Lamott, 2003; Shemmings & Shemmings, 2011).

ATTACHMENT STYLES		
Attachment Style	**Parental Style**	**Resulting Adult Characteristics**
Secure	Consistent, attuned and caring	Able to create meaningful relationships; empathic and can regulate emotions well
Avoidant	Unavailable or rejecting	Avoid emotional intimacy, dismiss own emotional needs, poor ability to express emotion
Ambivalent	Inconsistent/intrusive	Anxious; difficulty with impulsivity and frustration
Disorganized	Frightening or traumatizing; Ignored or didn't see child's needs	Disorganized behavior, poor emotion regulation and may be untrusting while craving closeness

Clinical Points

Insecure Attachment and Mentalization

As noted, the consequences of insecure attachment are far reaching. Without a coherent or secure internal working model to organize emotional states of others, insecurely attached individuals have difficulty identifying their own emotional states (Cozolino, 2012; Hart, 2006). Furthermore, without an understanding or awareness of one's own internal state, the ability to manage and self-soothe becomes a near impossible task. When individuals have a diminished self-reflective capacity, they experience difficulty connecting their own behavior to the reactions and behaviors of those around them. Consequently, an individual with insecure attachment experiences difficulty appropriately modulating their behavior, leaving them to react impulsively and seemingly erratic to those around them (Hart, 2006; Siegel, 2012). Insecure attachment has been found to reduce one's ability to regulate negative emotions, direct attention away from upsetting stimuli, inhibit impulses, plan ahead, focus, and interpret social information accurately (Sable, 2007).

Difficulty understanding one's own behavior and the behavior of others is related to the ability to engage in the process of mentalization. Mentalization may be defined as "[…] a form of preconscious imaginative mental activity, namely, interpreting human behavior in terms of intentional mental states" (Allen, Fonagy, & Bateman, 2006, p. 4). This ability to understand the minds of others is also related to theory of mind, empathy, psychological mindedness, and reflective function (Siegel, 2012). This skill is facilitated by the mother's ability to perceive the child's internal world, identify with it and "simultaneously realize that the child is separate" (Ogden et al., 2006 p.42). Mentalization is also related to the child's internalized sense of the mother. If the child repeatedly experienced inconsistent, dismissive, or fearful interactions with their caregiver, their capacity to understand the intentions of those around them is likely diminished due to incoherent internal representations (Busch, 2008).

Additionally, if surrounded by unpredictable, dysregulated, or fear-inducing adults, the child may avoid attempting to take on the perspective of their caregivers to avoid distress similar to their experience during previous interactions (Fonagy et al., 2011). Moreover, the ability to focus on another's state of mind requires an attentional shift that is directly related to prefrontal development in the brain (Fonagy, 2006). However, attentional control, related to the prefrontal cortex, may be negatively impacted by sustained levels of stress hormones in early development (Rothbart, Posner, & Kieras, 2006). As one can imagine, a diminished mentalization capacity has immense social implications and can lead to significant difficulties in managing and understanding one's interpersonal world.

Trauma and Attachment

When considering disruptions to attachment, it is necessary to review the impact of trauma on an individual's development and ability to live in our very social world. Traumatic experiences have been defined as those that evoke extreme distress, undermine the individual's ability to regulate emotional suffering, and reduce openness to interpersonal relationships due to reduced ability to trust others (Allen, 2013). When the perpetrator of trauma is the caregiver, it represents a significant failure in the attachment system and undermines the child's ability to recover from arousal and feel safe (Ogden, et al., 2006 p. 31). Early trauma also prevents the orbitofrontal systems from maturing and ultimately leads to a decreased ability to regulate one's affect (Ogden et al., 2006).

Unlike the comfort of interactions with caregivers in secure attachment relationships, which increase emotional regulation, children with abusive caregivers experience sustained traumatic states of mind, reducing overall emotional regulation abilities (Schore, 2002). If these traumatic states of mind take place throughout their first few years of life, they can impact the development of the brain and significantly reduce the growth potential in areas responsible for emotion management, cognition and social aspects (Cozolino, 2012).

Veterans and their Children: The Role of Attachment

Upon review of the attachment system and its neural correlates, it is clear that infants have an innate need for attuned and consistent caregiving, and thus these relationships are essential to the wellbeing and development of children (Osofsky & Chartrand, 2013). As the quality of the attachment relationship influences whether children experience stress as tolerable or toxic, it is plausible that children with a deployed mother may feel less secure in their parent's ability to provide care and safety, especially when the parent is facing the dangers of combat

(Lester & Flake, 2013 p. 127). Specifically, Gorman & Fitzgerald (2007) suggest that separation due to deployment may cause babies or toddlers to feel uncertainty or ambiguous loss. Moreover, repeated and lengthy deployments may increase the risk of insecure attachment (Cozza & Lieberman, 2007).

Additionally, military mothers who return from deployment with hyperarousal, negative beliefs about the safety of the world, dysregulated behavior, and/or avoidance of emotional states may be at risk for disrupting the attachment bond with their child. The development and maintenance of secure attachment is particularly important for the wellbeing of military children, as when young children face significant changes, those who lack supportive caregiving relationships may more be more vulnerable (Bowlby, 1980). However, stronger parent-child relationships may decrease risk and increase resilience for military children, further highlighting the need for attachment supportive interventions for female veterans and their children (Palmer, 2008).

Chapter 8

Effects of Separation and Reunification

As we consider the impact of separation and reunification on parent and child, it is necessary to review the Deployment Cycle Model, which describes the range of emotions and behaviors that families and children experience over the stages of deployment (Pincus, House, Christensen, & Adler, 2001). While multiple models exist with various stages, Pincus et al (2001) highlight three main categories: *pre-deployment, deployment,* and *reintegration*. Notably, this cycle may be better characterized as an emotional cycle, rather than a series of events (Pincus et al., 2001).

Phase 1: Pre-Deployment

The first phase, pre-deployment, is often a time military and family preparation, during which wills, taxes, home maintenance, holiday planning and military training occurs. Veterans may undergo medical evaluations and be required to attend counseling during this phase (Military One Source, 2012). Military families during this time may attend to legal and financial issues, living arrangements, and make plans for managing communication during deployment (Laser & Stephens, 2011; Rotter & Boveja, 1999). The veteran and family members may experience increased conflict, difficulty communicating or responding.

This stage has been deemed to be the most stressful for young children and research suggests that failure to include preverbal and young children in these preparations can contribute to children's stress (Kelly, 1994). This may be the case, as regularly access to attachment figures is threatened, thereby producing anxiety (Bowlby, 1979). Thus, Part IV of this manual will provide recommendations for preparing means to maintain actual or perceived access to their caregiver during the pre-deployment stage.

Phase 2: Deployment

The deployment phase of the cycle begins when the service member physically leaves their home station and enters active military operations (Military One Source, 2012). At this time, family members may experience emotional and physical destabilization (Pincus et al., 2001). While some may experience relief that the anticipation of deployment is over, some may feel sadness, anger, and anxiety. Additionally, the at-home caregiver may feel overwhelmed with financial, household and parenting responsibilities.

Phase 3: Post-deployment and Reintegration

The day a service member returns home from deployment is when reintegration begins. The reintegration period may vary in time and nature, and active duty service members may have a limited amount of time reintegrating prior to their next deployment (Yosick et al., 2012). Service members undergo medical and psychological evaluations, and receive additional trainings and briefings during this period to aid in the transition home (Military One Source, 2012). Some children may have continued difficulties even after the parent's return, making reintegration more challenging for the whole family, as well as creating difficulties in re-establishing a stable parenting role. Parenting issues that may arise during this phase include feeling estranged from parenting routines, lacking confidence in parenting practices, disagreeing with how children were parented during deployment, unwillingness to discipline, and difficulties with pacing parenting behavior (Snyder & Monson, 2012).

While the at-home caregiver may experience relief upon being able to share or hand over parenting duties, frustration may also arise if the returning veteran attempts to do things differently. Reintegration is therefore a period of readjustment for the veteran, the veteran and

child, the family, and the couple (if applicable) (Snyder & Monson, 2012). This phase in the deployment cycle will be further discussed in Part III.

THE DEPLOYMENT CYCLE

➢ *Pre-deployment*: Time of military and family preparation, during which wills, taxes, home maintenance, holiday planning and military training occurs. Families will attend to legal and financial issues, living arrangements, and make plans for managing communication during deployment. This period is deemed to be the most stressful for young children.

➢ *Deployment:* When the service member leaves the home station and enters active military operations

➢ *Reintegration:* When a service member returns home from deployment. Active duty service members may have a limited amount of time reintegrating prior to their next deployment. During this time, service members undergo medical and psychological evaluations, and receive additional trainings and briefings.

Clinical Points

Reactions to the Deployment Cycle:

During physical and emotional parental absences, it is not uncommon for children to experience anxiety and depression, or exhibit acting out behavior and declining academic performance (Miller et al., 2010). However, the length of the deployment, the child's age and the pre-deployment quality of the attachment relationship all may influence how children respond to deployment. Of note, the *Cumulative stress model* suggests that the longer and more often a parent is deployed, the greater the psychological, health and behavioral risk for the child. Approximately one third of military children with deployed parents score high on measure of risk for psychosocial problems, across age groups, which is 2.5 times higher than children of civilian parents (Fassler, 2010; Lincoln et al., 2008).

Additionally, the greater a deployed parent is exposed to combat, the more vulnerable young children are to the challenges of separation (Cozza et al., 2005). Chandra et al. (2010) suggests that children whose parents were deployed the longest exhibit more problem behaviors

and receive more mental health diagnoses. A review of studies found that parental deployment is consistently associated with children's behavioral and academic problems (Card et al., 2011). Specifically, a strong association exists between parental PTSD symptom severity and child behavior problems (Gold, Taft, Keehn, King, King, & Samper, 2007). However, the majority of research on children of veterans to date has been conducted with male veterans.

Additional research on the effects of parental deployment to Afghanistan and Iraq on children, found that children ages 3 and up had significantly higher externalizing behaviors and higher scores on the Child Behavior Checklist (CBCL) when compared to peers whose parents were not currently deployed (Chartrand et al., 2008). This may be particularly salient for female veterans and their children, as the extended absence of the primary caretaker may make attachment less secure. The threat of separation and loss of the attachment relationship may produce anxiety in children. Such anxiety may be exacerbated by young children's attributing that their parent left due to their own fault, and may contribute to behavior problems and expression of anger (Compton & Hosier, 2011; Osofsky & Chartrand, 2013).

Chapter 9

Developmental Considerations

To understand a child's reaction to the deployment cycle, it is necessary to consider the nature of the child's understanding of deployment and post-deployment, child characteristics, such as temperament and emotion regulation, as well as developmental process and the specific family context of the child (Rutter & Garmezy, 1983).

Infants and toddlers

Children under age 5 represent the largest group of minor dependents of U.S. active duty service members and continue to be the most impacted by parental deployment (Department of Defense, 2010; Deputy Assistant Secretary of Defense, 2015). Young children are particularly sensitive to long separations from their primary caregiver, which is likely related to the critical period of developing a strong attachment bond (Lester & Flake, 2013). Thus, physical deployment-related separation from one's mother is not only disruptive, but may be threatening to the infant's development if no support or interventions are provided.

A recent study of Army families indicated that children ages zero to five struggled more with deployment-related parental absence as compared to older children (Orthner & Rose, 2005). Due to their development stage, infants and toddlers may not remember the attachment bond that existed prior to deployment. Children of this age may also not fully understand the changes that occurred when a parent deploys but have the capacity to understand that the environment has dramatically changed (Compton & Hosier, 2011). Infants and toddlers may also experience feelings of loss, insecurity or a decreased feeling of trust and may express the stress of separation by displaying irritability and agitation and struggling with daily routines, regressing behaviorally, withdrawing emotionally or acting out (Miller et al., 2010; Williams & Mulrooney,

2012). Toddlers may exhibit more obvious signs of distress, such as through clinginess, resistance to daily activities, lack of appetite and disturbances in sleep and eating (Miller et al., 2010). Furthermore, in a study of young children with a deployed parent, concerning attachment behaviors were seen, such as seeking attention, clinginess and continually asking where the absent parent was (Barker & Berry, 2009).

Additionally, various studies of OEF/OIF military families indicate that young infants with a deployed parent experience behavioral difficulties. In a study of young military children, those ages three to five with a deployed parent were more likely to develop behavioral and emotional problems than children without a deployed parent, particularly if the parent exhibited signs of distress (Chartrand et al., 2008; Lester & Flake, 2013). This is supported by additional studies that note that even when socioeconomic variables are controlled for, young children with a deployed parent exhibit behavioral problems more than those with a non-deployed parent (Chartrand et al., 2008; Barker & Berry, 2009). Overall, findings reveal that oftentimes the deployed parent will reunite with a child who is quite different from the one they left and who may have little to no memory of the parent or relationship from which to draw nurturance and support (Defense Advisory Committee on Women in the Services, 2004).

School-Aged Children

With an increased awareness of deployment, preschoolers developmentally have the psychological capacity to grieve the loss of the deployed parent. They may also have an understanding of the potential danger to the deployed parent and have the ability to read and feel emotions of sadness, anger and anxiety from adults they live with (Paris et al., 2010). Taken together, these factors likely contribute to preschoolers' common reaction of anticipatory stress (Chartrand et al., 2008). Elementary school-aged children tend to still think concretely and may

also have more limited problem-solving skills than older children, which could hinder their ability to cope with parental absence during deployment (Juszczak & Sadler, 1999).

Consequently, preschoolers may react to separation through behavior regression, such as being aggressive or demanding, wetting the bed and crying for attention (Miller et al., 2010). These responses can potentially create a dynamic in which the non-deployed caregiver, who is already coping with increased amounts of stress and responsibility, may react with irritation, agitation, or even avoidance, which may further exacerbate the child's behavior and wellbeing, as well as the overall family functioning (Miller et al., 2010).

As children move into school age, peer relationships and academics become increasingly important. Thus, it is notable that school-aged children may display higher levels of emotional and behavioral distress, as well as difficulties with school and peer relations (Lester et al., 2010; Lincoln, Swift, & Shorteno-Fraser, 2008; Engel, Gallagher, & Lyle, 2006). School-aged children may express their distress physiologically, emotionally and behaviorally and often demonstrate elevated levels of anxiety (Chandra et al., 2010a; Lester et al., 2010). Of note, a study of school-aged Marine Corps and Army children reported greater symptoms of anxiety when a parent was deployed and up to a year after the parent returned home. Such a trajectory suggests that the emotional effects continue after deployment ends (Lester et al, 2013).

In a recent study of school-age children (ages 5-12) of OEF/OIF veterans, nearly one third of children with a deployed parent were deemed to be high risk for having problems with psychosocial functioning. Additionally, internalizing behaviors were more commonly observed than externalizing behaviors. Of note, the reported level of psychological distress experienced by children was twice as high as the national normative scores, suggesting that deployment of a parent represents a stressor unique to military families on school-aged children (Flake et al.,

2009). Additionally, in a review of over 300,000 records of children ages 5-17 with an Active Duty Army parent, deployment was associated with increased medical visits that resulted in a mental health diagnosis. Common diagnoses included acute stress reaction/adjustment, mood, and behavioral disorders (Mansfield, Kaufman, Engel, & Gaynes, 2011).

Furthermore, separation between parent and child at this phase of development may have an even stronger impact on the child if the reason for separation entails danger and school-aged children and adolescents are more aware of their parents' duties and the dangers of war (Lester & Flake, 2013). Specifically, in one study of children age four and below, the strongest predictor of traumatic stress symptoms in children was the perception of threat to their caregiver (Scheeringa, Zeanah, Dreel & Larrieu, 1995). Such perceptions may be elevated for children of OIF/OEF veterans, as they are old enough to have a partial awareness of the risk to their parent but too young to accurately understand the specific threat (Paris, DeVoe, Ross & Acker, 2010).

Additional stressors for children at this phase are that as they reach middle school, they may begin to experience transitions into puberty. Such transitions may elicit questions from the at-home caregiver, who may not adequately address them. It is plausible that children experiencing pubertal transitions may struggle more during this time if the same-sex parent is deployed (Alfano, Lau, Balderas, Bunnell, & Beidel, 2016).

Adolescents

Adolescent years entail a great degree of change, including hormonal and pubertal change, social and peer relationships, individual identity, dating, and increased independence from parents. This phase of development in and of itself can often be both a tumultuous and exciting time for teenagers, let alone when teens have a deployed parent. However, teens with a

deployed parent may be at increased risk for sensation-seeking behavior, emotional disturbances, physical injury, and mortality (Dahl, 2004).

Adolescents with a deployed parent have been found to worry about the safety of the deployed parent, the emotional pressure on the at-home parent, and shifts in roles and responsibilities in the family (Mmari, Roche, Sudhinaraset, & Blum, 2009). Adolescents with a deployed parent are more likely to experience academic decline (Chandra, Lara-Cinisomo et al., 2010; Orthner and Rose, 2005), depressive symptoms (Heubner et al., 2007; Orthner and Rose, 2005) and peer relationship problems (Chandra et al., 2010a; Finkel, Kelley, & Ashby, 2003) than those without a deployed parent. Adolescents have also been found to experience increased stress, anxiety and fear related to potential death of their deployed parent (Knobloch, Pusateri, Ebata, & McGlaughlin, 2015; Mmari et al., 2009; Thompson, Baptist, Miller, & Henry, 2015). Thus, it is not surprising that adolescents with a deployed parent are more likely to report binge drinking, abuse of prescription drugs, marijuana use, and other substance use than teens from non-military families (Acion et al., 2013; Gilreath, 2013). Furthermore, teens with a deployed parent or sibling have been found to have heightened rates of sadness, hopelessness, and suicidal ideation when compared to adolescents with no familial deployment (Cederbaum et al., 2014).

To meet the challenges of adjusting to deployment, adolescents commonly take on household responsibilities and become more independent. These responsibilities may include additional chores and caring for siblings, and adolescents may even begin to assume the role of the missing parent, especially in regards to emotional support (Esposito-Smythers et al., 2011; Huebner et al., 2010). However, such a shift in responsibility can result in parentification of the child (Harkness, 1993; Harrison & Albanese, 2012). Nevertheless, these family changes may have positive and negative effects, as in a focus group, 12-18 year olds expressed concerns about

changes in family routines and increased responsibilities, but also expressed pride in having a service member parent (Huebner & Mancini, 2005). Other research indicates that as a result of taking on additional responsibilities, adolescents report that their extracurricular activities and social activities with peers are often significantly scaled back (Huebner & Mancini, 2005; Wong & Gerras, 2010).

It is notable that differences in perception of responsibility may be related to the teen's level of coping. Specifically, adolescents with strong coping skills may obtain personal satisfaction and value from helping and caring for others, whereas those with less effective coping skills may experience these changes as overwhelming and may feel angry or resentful about the additional burdens placed on them as a result of deployment (Lester & Bursch, 2011). Specifically, renegotiating roles and responsibilities has been noted to be one of the most significant sources of stress for families when the deployed parent returns, as the family is forced to readjust and even get to know each other all over again (Mmari et al., 2009).

These additional roles may be compounded upon the return of the deployed parent, as they may be asked to take on even more responsibility or even care for the injured or disabled parent (Gorman et al., 2010). It is also possible that adolescents whose roles in the family were more significant during deployment may experience greater stress than younger children during the reintegration process Mmari et al., 2009). It is noteworthy that failing to recognize and express appreciation for the adolescent's contributions during deployment is likely to intensify individual and family level negative outcomes; a finding that is similar for both military and civilian families (Hooper, 2007; Hooper, Doehler, Jankowski, & Tomek 2012).

Research on OEF/OIF veteran children reveals that adolescent girls are more likely to encounter challenges than boys during parental deployment. Specifically, in a study of children ages 11-17, researchers found that adolescent girls reported more difficulty in school performance, family relationships, and peer-relationships than younger children in the study (Chandra et al., 2010). However, overall, adolescents have been found to cope better with the deployment cycle, as their intellectual and emotional maturity appears to provide them with a better perspective on parental absence and the reasons behind deployment, which may mitigate deployment stress (Wong & Gerras, 2010). Moreover, adolescents who take on greater responsibility within the family and have more extensive peer networks may be more resilient in the face of deployment stress (Flake et al., 2009). Furthermore, a recent study on deployed OEF/OIF female veterans and their adolescent children suggests that deployment-related maternal absence created significant changes in family routines and parenting, which may be unique to maternal rather than paternal absence from the home (Musick, 2009).

Chapter 10

Obstacles at Home

The deployment cycle not only impacts children's emotional wellbeing, but also places stress on the family unit, marriages and the spouse who is left behind. For children of service members, deployment means that the child's primary caregiver, their usual resource for regulating distress, is not immediately available. Thus, the child may seek support from the parent or caregiver who remains home. However, it is not uncommon for the partner who is left behind to experience an increase in household duties, parenting responsibilities and worry over the deployed spouse's safety. Moreover, the non-deployed caregiver may experience difficulty obtaining timely and reliable information regarding the service member (Faber et al., 2008). The combination of these stressors has the potential to impact parenting behaviors and interfere with the non-deployed parent's ability to respond to the child's increased need for attachment (Lester et al., 2010; Williams & Rose, 2007). Therefore, even the most responsive and consistent caregiver may become less available and attuned to the child's emotional needs (Paley, Lester & Mogil, 2013).

Child Maltreatment

The non-deployed caretaker's ability to cope with the additional stress and negotiate changes in roles and responsibilities may therefore directly impact the ability of young children to successfully manage a parent's deployment (Cozza et al., 2005; Gorman & Fitzgerald, 2007; Osofsky & Chartrand, 2013).

The mental health of the at home caregiver is also important to consider regarding the safety of the child or children. Specifically, child maltreatment and neglect has been shown to significantly increase when a parent is deployed to a combat related mission, particularly in

families with younger parents and younger children (Liebermann & Van Horn, 2013). Various studies reported increases in child maltreatment, including neglect, physical, emotional and sexual abuse associated with parental deployment. These increases have been found throughout each phase of the deployment cycle (Gibbs, Martin, Kupper, & Johnson, 2007; McCarthy et al., 2015; Rentz et al., 2007; Thomsen et al., 2014). Notably, these rates do not appear to exceed those found in civilian samples, suggesting that while deployment may pose increased levels of stress and risk, children of veterans do not experience greater levels of maltreatment than children in the general population (Alfano et al., 2016). Nevertheless, clinicians working with military families should consider the impact of added stress and responsibility, as well as limited resources and support available to caretakers who remain at home in an effort to support healthy family functioning.

Military Spouses & Couples Issues

Military spouses and partners report higher levels of stress than those in the civilian population (Padden, Connors, & Agazio, 2011). It is not uncommon for military spouses to experience depression, anxiety, sleep difficulties, parenting stress and ambiguous loss (Eaton et al., 2008; Gorman et al., 2011; Lester et al., 2010; Steel Fisher et al., 2008). Stressors on partners include increased childcare and home responsibilities, difficulty getting time off of work, and financial burden. As such, these individuals may be less likely to seek mental health services to aid in stress management (Mansfield et al., 2010). In an effort to mitigate the at-home parent's stress, children may attempt to take on more responsibilities around the home, cutting back on sports and social activities (Chandra et al., 2011). Children may also be impacted by the at home caregiver's emotional health through direct exposure to their negative affect, cognitions and behavior, as well as decreased emotional and physical availability for children. Increased stress

paired with ineffective coping strategies, may also lead non-deployed parents to employ punitive parenting practices (e.g., Compas et al., 2001; Goodman & Gotlib, 1999)

Clinicians may consider interventions that aid military spouses or non-deployed caretakers in coping with stress, which are likely to improve family communication and empathy between parent and child. Research suggests that when young children experience empathy and understanding from their caregiver, they are less likely to exhibit behavioral problems or need mental health services during the parent's deployment (Osofsky & Chartrand, 2013). Though the treatment recommendations discussed in Part IV are geared towards the returning service member, interventions that bolster the attachment bond could reasonably be applied to the at-home caregiver as well to support the well-being of themselves and their child.

An additional stressor for non-deployed parents is the impact of deployment on the marital relationship. Military families commonly report increased martial conflict during deployment, which is significant for female veterans who have higher rates of divorce than men, are more likely to remain divorced, and are less likely to remarry (Hall & Wensch, 2008). Furthermore, female veterans who are mothers are nearly three times more likely than male veterans to be single parents (Sayers et al., 2011). Vulnerabilities to relationship stability and satisfaction include marrying at a younger age, low level of education, and prior marriages (Snyder, Mangrum, & Wills, 1993).

In addition to marital difficulties during deployment, couples may also experience a strain on the relationship during the reintegration period. While many couples and families successfully navigate this period without many challenges, others may experience extended stressors, particularly when couples issues exist prior to deployment or when service members return with physical or psychological injury from combat (Peebles-Kleiger & Kleiger, 1994).

The Complicated Family Reintegration (CFR) framework recognizes four factors that impact the couple, as well as family functioning: (1) pre-existing level of couple and family functioning, (2) the degree of physical injury and rehabilitation needed by the veteran, (3) significant relationship events that occurred during deployment (e.g. infidelity, family crisis), and (4) the degree of military behaviors exhibited by the service member (Sayers, Farrow, Ross, & Oslin, 2009). Additionally, psychiatric symptoms have been found to lead to greater difficulties during reintegration (Sayers et al., 2009).

Common couple's issues during reintegration include a sense of lost autonomy after having adapted to running the household while the veteran is deployed, having differing expectations and desires for emotional and sexual intimacy, as well as lingering resentment or negative feelings towards the service member for deploying (Drummet, Coleman, & Gable, 2003; U.S. Army, 2007). Such issues may be compounded by the fact that each partner has developed his or her won way of coping during deployment, and may experience difficulty understanding the other and adapting to them during reintegration. These difficulties may be exacerbated by a variety of stressors, including military trauma (Epstein & Baucom, 2002).

COUPLE'S ISSUES

➢ Vulnerabilities to relationship stability and satisfaction include marrying at a younger age, low level of education, and prior marriages
➢ Complicated Family Reintegration (CFR) framework four factors that impact the couple and family:
   o (1) Pre-deployment level of couple and family functioning
   o (2) Degree of physical injury and rehabilitation needed
   o (3) Significant relationship events that occurred during deployment
   o (4) Degree of military behaviors exhibited by the service member
➢ Military trauma and psychiatric symptoms may increase reintegration difficulties

Clinical Points

Furthermore, there are a variety of developmental tasks through which couples must work through post-deployment. These include renegotiating household duties, such as chores and other routines, reestablishing or strengthen joint problem-solving and decision-making abilities, and reestablishing social support outside of the nuclear family. Additionally, military couples may need to come to terms with changes that occurred in the marriage and in their partner during deployment, as well as resolve any marital issues or tensions that arose during pre-deployment (Drummet et al., 2003; Faber et al., 2008).

Taken together, such stressors may limit a parent's emotional availability and put children at a greater risk for behavioral and emotional problems. Thus, the non-deployed parent plays a critical role in maintaining the well-being of a family during deployment. However, when the remaining parent is psychologically and physically available to provide consistent and nurturing care to a young child, the child's sense of security is bolstered in the face of trauma or loss, thus increasing resilience. Therefore, the psychological well-being of the non- deployed parent or caregiver strongly predicts children's response to deployment (Chandra et al., 2010b; Flake et al., 2009; Lester et al., 2010).

Chapter 11

Resilience Factors

Despite the many challenges military families face, many are highly resilient and manage to cope with the stressors of deployment and reintegration. Resilience may be defined as "the capacity of a dynamic system to withstand or recover from significant challenges that threaten its stability viability or development" (Masten, 2011, p. 494). Research on resiliency in children indicates that they are most resilient when they have positive and stable relationships with adults (MacDermid et al., 2005). In fact, parenting behavior is a core factor in the promotion of a child's resilience in highly stressful situations (Masten, 2001). Such support may come from extended family or a supportive military community, making the added strains during deployment more manageable (Williams & Rose, 2007). Specifically, recent studies report that families living in military housing demonstrate fewer challenges compared to those living in non-military housing (Chandra et al., 2010a; Wong & Gerras, 2010). On the other hand, lacking support from those familiar with the strains of deployment may intensify the demands of parenting young children.

Perception of support from the at-home parent appears to be an important protective factor both during deployment and reintegration (Morris & Age, 2009). The ability for the at-home parent to sensitively respond to the child's emotional needs, as well as having siblings who assist in emotional support during pre-deployment, deployment and reintegration appears to be paramount. Support includes open, sensitive, and reciprocal communication between parents, children and siblings, as well as engagement in and supervision of their activities (Houston, Pfefferbaum, Sherman, Melson & Brand, 2013). Children with these protective factors are likely to have healthier capacities for emotion regulation and overall psychosocial development (Paris,

et al., 2010). Resilience in children is also closely linked to the child's personal characteristics, such as an easy temperament and cognitive functioning (Condly, 2006; Huebner & Mancini, 2005; Luthar, 2006; Aisenberg & Herrenkohl, 2008).

Resilience in Children
- Having positive and stable relationships with adults
- Having social support familiar with military culture
- Sensitive responding to the child's emotional needs
- Open, sensitive and reciprocal communication
- Perception of support from the at-home parent
- Engagement in and supervision of children's activities
- Easy temperament and level of cognitive functioning in the child
- Pre-deployment discussions that include children
- Predictable and routine environments
- At-home caregiver's perception of coping ability

Clinical Points

Additional factors of importance include a predictable and routine environment and pre-deployment discussions with children to provide a sense of safety and reassurance (*further discussed in section IV*). Moreover, high pay and benefits, job security, child care, healthcare, and access to social services provide stability, resources and may have a long-lasting effect on children's physical, cognitive and social-emotional development and may help to buffer the stress of deployment (Lester & Flake, 2013). Finally, children's capacity for resilience is also partly contingent upon the parent's previous experiences and current perception of her own capacity to cope with stress (Masten, 2001).

Part III: AFTERSHOCK: BRINGING THE WAR HOME

Chapter 12

Reunification and Readjustment

Not much is known about female veterans' transitions between deployment, military life, and post-military life. While military families eagerly await the return of their loved ones, the readjustment that comes with reunification can be the most stressful period in the deployment cycle (Lester & Flake, 2013). Research suggests that the post-deployment readjustment period may last up to three years (Gewirtz, et al., 2011). The post-deployment period may be particularly stressful following combat experience, as it requires renegotiating roles as partner and parent, while often coping with feelings of estrangement (Faber et al., 2008). Post-deployment stressors for female veterans may include readjusting to the primary caregiver role, public and personal perceptions of the "veteran woman" identity, and access to post-deployment healthcare services (Street et al., 2009).

Furthermore, challenges in reestablishing relationships may arise and could be exacerbated by physical, developmental and emotional changes in spouses and children (Riggs & Riggs, 2011). Veterans often express feeling like a guest in their own home, although they many not spontaneously report this. However, this experience may be more attributable to difficulties with reintegration rather than preexisting mental health or structural difficulties (Sayers, 2011).

Moreover, it is not uncommon for very young children of returning service members to have difficulty recognizing the parent or becoming confused or anxious when the parent returns and attempts to resume old routines and roles (Barker & Berry, 2009; Compton & Hosier, 2011). Even under the most optimal circumstances, the parent and child must re-establish their relationship upon returning home. However, this may become particularly difficult when

compounded by the challenge of service members returning home with mental health or physical

injury concerns (Goff, Crow, Reisbig, & Hamilton, 2007).

Chapter 13

Invisible wounds: The Impact of Parental PTSD Symptoms on Children

For better or worse, the adversities veteran parents face, whether demographic, environmental, physical or psychological, impact children both directly and indirectly (Lester & Flake, 2013). In particular, traumatic life events and symptoms of trauma, coupled with difficulty managing one's own reactions, may compromise parenting (Ruscio et al., 2002). Moreover, trauma has the potential to disrupt views of safety and trust, which may undermine a service member's ability to provide and maintain secure attachments with their children (Solomon, Dekel & Mikulincer, 2008). Congruently, research indicates that children of parents who suffer deployment related psychological distress are at risk for adjustment problems (Beardslee et al., 2003).

Impact of PTSD Symptoms

Literature from earlier eras, such as Vietnam, suggests that there can be trauma-related interference upon reintegration, including controlling and overprotective parenting behavior, and parenting styles of disengagement or enmeshed relationships with the child (Rosenheck & Nathan, 1985). Specifically, a study of Vietnam War veterans found that certain PTSD symptom clusters were more predictive of poor parent-child relationships. These included avoidance, emotional numbing and hyperarousal. Similarly, in OEF/OIF veterans diagnosed with PTSD, children tended to act afraid or not warm towards the veteran (Sayers, Farrow, Ross, & Oslin, 2009). Moreover, greater PTSD symptom severity in female veterans, particularly hyperarousal and avoidance/emotional numbing were significantly related to decreased parenting satisfaction, which could further compound problems in the parent-child relationship (Gold et al., 2007).

Following MST, female veterans are more likely to experience symptoms of numbness and emotional detachment. These symptoms, coupled with avoidance, hyperarousal and reactivity to trauma cues may communicate messages of being unloved to the child (Boucher, 2014; Ruscio, Weathers, King & King, 2002). Moreover, these symptoms may decrease the veteran's ability to engage with and meet the emotional needs of her child (Ruscio et al., 2002). Thus, symptoms of PTSD may directly impact the attachment system and subsequently the child's emotional functioning as they develop.

Though each individual experiences and copes with trauma differently, a trauma is an emotional shock that may lead to a series of symptoms. In an effort to understand how deployment related stressors impact the attachment relationship, we must first review the impact that specific PTSD symptoms may have on the developing child.

Re-experiencing. Symptoms of re-experiencing can occur suddenly and are typically accompanied by intense emotions, including fear, anger, guilt or grief, particularly if intrusions are so strong that the veteran believes the trauma is reoccurring. While these symptoms can be frightening for the veteran herself, they may also be frightening for a witnessing child who does not understand what is occurring or why. Subsequently, children may begin to worry about their parent's well-being or even develop worries about their parent's ability to care for them (Price, 2014). Moreover, parents who react to reminders of combat stress and loss may withdraw from family interactions and routines (Saltzman, Pynoos, Lester, Layne, & Beardslee, 2013).

Emotional numbing. Negative alterations in cognitions and mood associated with the traumatic event may include symptoms of emotional numbing or estrangement. Earlier studies suggest that emotional numbing is linked to relationship difficulties after war trauma (MacDonald, Chamberlain, Long & Flett, 1999; Rosenheck & Thomson, 1986). These symptoms

coupled with avoidance may appear as detachment from family relationships and activities, as well as reduced involvement in parenting (Gewirtz et al., 2010).

Symptoms of avoidance and detachment can directly impact children, as when the veteran withdraws from her family and has trouble experiencing positive emotions, children may inaccurately interpret this behavior as the parent not being interested in or loving them, despite the parent's attempts to communicate otherwise (Price, 2014; Ruscio et al., 2002). Recent studies indicate that the strongest predictor of parent-child relationship problems is symptoms of emotional numbing. Thus, detachment, numbing and avoidance directly affect the relationship between the female veteran and her child by interfering with her ability to initiate and or sustain interactions that foster connection with the child engage the child in everyday activities (Ruscio et al., 2002).

Hyperarousal. Individuals with PTSD often experience high levels of anxiety and arousal, which may manifest as difficulty sleeping, impaired concentration, and being easily startled. Also present may be high levels of irritability, hypervigilance and exaggerated concern for their own safety and the safety of their loved ones. Such irritability may contribute to low frustration tolerance, which can make a parent appear distant or hostile. Moreover, it is not uncommon for parents with PTSD to be overprotective or react strongly and unpredictably to reminders of trauma (Matsakis, 1988). Symptoms of hyperarousal may lead to reactive parenting responses, particularly in stressful situations, such as discipline or conflict that may be inconsistent with the intensity or content of the child's behavior and may contribute to emotional dysregulation in the child (Gewirtz, et al., 2010; Lieberman, 2004). Children may view such behavior as confusing, upsetting or even frightening (Main & Hesse, 1990).

Overall, the severity of parental PTSD symptoms has been associated with child behavior problems (Gold et al., 2007). PTSD symptoms appear to diminish parents' capacity to interact with children in a warm and responsive manner, and to calmly manage conflict. Preliminary findings in this area indicate that PTSD symptom severity is correlated with female veteran perpetrated psychological abuse (Leiner, 2009). Notably, female veterans are more likely to engage in psychological aggression than physical aggression (Leiner, 2009), which is highly significant, as it differs from research on male veterans and may indicate a key difference in the expression of anger between male and female veterans, and thus, presents an opportunity for targeted treatment. This finding represents a concern due to the growing literature on the relatively stronger emotional impact of psychological abuse than physical abuse, as well as females' role as the primary caregiver and attachment figure in most families. Thus, symptoms of trauma not only affect the veteran, but also the functioning and emotional security of her children (Gavlovski & Lyons, 2004; King et al., 2006).

Chapter 14

Symptoms of the Child

Developmental research has long established parenting behaviors' significant association with children's overall healthy development, adjustment, and well-being (Diamond, Diamond & Levy, 2014). More recent findings indicate child adjustment is predominately affected by parenting impairments that occur as a direct result of stressful family situations, which can no doubt include parental deployment and mental health issues (Gewirtz, Pinna, Hanson & Brockberg, 2014; Patterson, Reid, & Dishion, 1992). Thus, it is paramount for clinicians to consider how post-deployment stressors, such as physical injuries or mental health issues may be impacting the parent's interactions with the child.

Intergenerational Transmission Processes

Though the intergenerational effects of war trauma have been documented in the literature, recent research on the interplay between attachment and interpersonal neurobiology provide insight into the various mechanisms of transmission. The literature posits that parents with disorganized attachment style are more likely to raise children with disorganized attachment styles (Allen, 2013; Nilsson, Holmqvist, & Jonson, 2011). Additionally, caregivers who suffer from unresolved trauma or anxiety may express more messages to their child that the world is unsafe than those without a history of trauma or anxiety (Hart, 2006). The parent-child relationship may be further disrupted by a decreased ability for empathy, emotional expression and regulation, commonly seen in parents with unresolved trauma (Allen, 2013). Such impaired capacities may be transmitted to the child through the child's vicarious identification and internalization of the caregiver's emotion regulation capacities, which may lead them to take on the psychological burdens of their parents (Doucet & Rovers, 2010).

Children's interpretations of interactions and signals between themselves and their parent may influence their sense of safety in the world, as well as their sense of self. Finally, literature suggests that impaired regulatory capacities in traumatized parents may be passed down to the child, thereby placing the child at higher risk for PTSD if they experience a traumatic experience later in life (Cassidy & Mohr, 2006). Bearing emphasis, a diagnosis of PTSD is not required to impact the attachment relationship, as trauma related beliefs and messages might be communicated by a parent who does not have PTSD. These communications may still result in overt and covert disruptions in functioning and adjustment (Danieli, 1998; Ancharoff et.al 1998). Anarchoff and colleagues (1998) have identified four additional processes that contribute to the intergenerational transmission of trauma, including: *silence, over-disclosure, identification and re-enactment.*

Mechanisms of Intergenerational Transmission of Trauma

➢ 4 mechanisms that contribute:
  o Silence: avoidance of discussing certain topics, thoughts, and emotions.
  o Over-disclosure: sharing details that are not age appropriate and are potentially traumatizing
  o Identification: sharing in symptoms of the traumatized parent
  o Re-enactment: recycling traumatic events and relationships from the past
➢ Potential roles of the child:
  o Over-identification: sharing in symptoms often due to over-disclosure
  o Rescuing: taking on adult roles and responsibilities
  o Emotionally uninvolved: withdrawing emotionally

Clinical Points

Silence may manifest as avoidance of discussing certain topics, events, thoughts or emotions. Family members may directly silence a child or model avoidance. When this occurs, it is not uncommon for children's anxiety to increase, as the child may begin to worry about triggering the parent's symptoms, and may even develop their own ideas about the parent's

experience, which could be even more frightening than what actually occurred. On the opposite spectrum is over-disclosure. Parents may discuss graphic or lengthy details about their traumatic experiences, which could potentially lead to children developing their own symptoms of PTSD in response to the images created by the disclosures. In identification, the child may begin to identify with the parent by sharing in her symptoms as a means to connect. For individuals with a history of trauma, experiences of the past often intrude into the present. Consequently, children may be inadvertently pulled to reenact some aspect of the traumatic experience when parents struggle to separate the past and the present.

Roles of the Child

When over-disclosure is prominent, children may respond by taking on various roles in the family. For example, *the "over-identified" child* may feel and behave just like their parent as a way of trying to connect with the parent and may even display many of the same symptoms as the parent with PTSD. This child may also disengage from activities that are age appropriate (Harkness, 1991). Another role is that of *the "rescuer" child***,** who becomes parentified by taking on the adult role and acting like a grown up to fill in for the parent with PTSD. It is not uncommon for these children to take responsibility for his or her parent's problems. The third role is *the "emotionally uninvolved" child***,** who may emotionally detach and receive little emotional support. Consequently, these children may have difficulties with school, depression, anxiety and relationship problems later in life (Price, 2014).

As untreated symptoms of PTSD have the potential to create unpredictable, frightening or unavailable parent-child interactions, it is plausible that children of female veterans who experience symptoms of trauma may be at high risk for developing insecure attachment. Research on non-military families indicates that parents who experience unresolved trauma or

loss are more likely to have children with a disorganized attachment style (Lyons-Ruth &

Jacobvitz, 1999). Thus, it is plausible that such conditions extend to the veteran population.

Notably, even when optimal parent-child attachment exists pre-deployment, attachment security

may shift as an adaptation to a changing environment in light of stressors, such as trauma.

Part IV: TREATMENT CONSIDERATIONS

Chapter 15

Mindfulness and Stress Reduction

Thus far, this manual has identified the disruption and prolonged separation inherent in deployment, as well as potential mental health issues in the veteran as key stressors on the quality of the attachment bond. Having identified secure attachment as a protective factor for children's long-term socio-emotional development, the clinician's goal thereby centers on repairing and strengthening the attachment relationship throughout the deployment cycle. Therefore, this section includes interventions aimed at buffering parenting stress with the goal of facilitating secure attachment and improving child outcomes. Additionally, it contains practical strategies to buffer the impact of prolonged separation during deployment in an effort to maintain and sustain attachment security throughout the deployment cycle.

With the understanding that early attachment relationships impact neural development, it is then important to discuss interventions that harness neural plasticity in an effort to rewire the brain towards secure attachment. One such approach is mindfulness, which Siegel (2007) suggests is a natural extension of attachment theory and research. Though meditation has been an integral component of spiritual, religious and cultural traditions for thousands of years, the related technique of mindfulness has recently gained attention in the scientific and psychological communities. The origins of mindfulness lay in Buddhist meditation and the concept spans various techniques, including focusing on breath, physical awareness, and the senses. Though mindfulness includes a variety of exercises, the unifying goal is to enhance one's ability to focus on the present moment experience without a nonjudgmental attitude (Marciniak, 2014).

Mindfulness-Based Stress Reduction

At its simplest definition, mindfulness is a moment-to-moment awareness of one's experience without judgment. Mindfulness Based Stress Reduction (MBSR), a highly researched program created by John Kabat-Zinn, was initially created to help manage stress in patients diagnosed with medical conditions, such as cardiovascular diseases. This program has since expanded to address issues of anxiety, depression, emotion regulation disorders, chronic pain and others over the years (Kabat-Zinn, 1990). This 8-week program combines meditation, mindfulness, and yoga and is now a widely accepted form of complementary medicine.

MBSR and subsequent mindfulness programs have been shown to reduce psychological distress affective disturbance, and overall stress, while increasing emotion regulation and wellbeing (Astin, 1997; Kabat-Zinn et al., 1985; Shapiro, Schwartz, & Bonner, 1998, 2007; Speca, Carlson, Goodey, & Angen, 2000; Speca, Carlson, Mackenzie, & Angen 2006). Mindfulness training has also shown to increase one's ability to cope with stress, attune to others and decrease anxiety, depression and overall symptomology (Shapiro & Carlson, 2009). It has also been associated with increased positive states, such as resilience, self-esteem, and compassion (Astin, 1997; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007; Kabat-Zinn, et al., 1985; Shapiro et al., 1998, 2005, 2007).

Change Your Brain by Changing Your Mind

In an effort to understand the mechanisms that produce these positive changes, neuroimaging studies have begun to explore changes in neural structure associated with meditation practice. Numerous studies utilizing Magnetic Resonance Imaging (MRI) reveal that individuals who regularly practice meditation exhibit different brain morphometry, or measurement of brain structures, with a notable difference in gray matter in multiple regions of

the brain when compared to non-meditators (Singleton et al., 2014). Gray matter may be understood as a type of neural tissue composed of cell bodies, whose purpose is to pass along and process sensory information; thus it is a major component of the brain.

In a recent longitudinal study by Singleton and colleagues (2014), MRI was used to examine the neural structure of participants of an 8-week MBSR program. Results indicate that participants demonstrated an increase in psychological well-being, which was correlated with increases in gray matter concentration in the brain stem. Gray-matter increases were also found in the hippocampus, known to be important for learning and memory, and in structures associated with self-awareness, compassion, and introspection. Moreover, participants' reports of stress reduction were related to decreased gray-matter in the amygdala, an area important for anxiety, stress, and fear (Davidson et al., 2003; Singleton et al., 2014). Non-meditators in the control group did not exhibit these changes, further supporting the idea that changing your mind through meditation can change your brain.

Chapter 16

Helping Children by Helping Mothers

Recent research has explored the impact of mindfulness practices on relational wellbeing, as well as the impact of parent's mindfulness on children's behavior (Singh et al., 2006). Mindful approaches to parenting differ from programs, such as MBSR, as they have an interpersonal, rather than intrapsychic focus, with particular attention given to the parent-child relationship. Mindful parenting may be defined as "*a set of parental practices or skills that seek to enhance moment-to-moment awareness in the parent–child relationship*" (Duncan, Coatsworth, & Greenberg, 2009). This awareness includes thoughts, emotions, and body sensations, and it is an ongoing practice. Such a practice targets parents' tendency to interact with their children on automatic pilot, which may occur at anytime, but particularly during times of stress. Automatic pilot can be connected to the fight, flight or freeze response, which is particularly salient for female veterans whose stress response may be heightened post-deployment.

Such automatic reactions often end with the child and/or parent responding in anger and hurt, further exacerbating negative emotions and patterns of interaction. Thus, by cultivating mindful awareness of their own experiences, female veterans can develop the ability to pause before reacting in a habitual or automatic manner, even under stress and exercise choice in responding to experiences and interactions in order to provide a beneficial environment to develop a secure attachment relationship (Duncan et al., 2009; Synder, Shapiro, & Treleaven, 2012; Pakdaman, 2014).

Mindful Parenting: Ingredients of Secure Attachment

"If we can see a situation and our own internal reactions to it with greater clarity, we can

respond with greater freedom of choice" (Shapiro et al., 2006 p. 381).

A mindful approach to parenting has been suggested as one avenue for promoting secure attachment. Though ideally an internalized secure base is achieved through interpersonal attunement, mindfulness appears to be another route through which an internal process of attunement can cultivate a secure base (Siegel, 2010). Moreover, mindful awareness promotes the same benefits that are associated with secure attachment, including emotional and physiological regulation, attuned communication with others, insight and empathy (Siegel, 2007). It is suggested that reflecting on internal states in mindfulness is a form of internal attunement, where the observing self attunes to inner experience in an open and compassionate manner. Similarly, secure parent-child attachment is characterized by interpersonal attunement (Siegel, 2012). Thus, if a mother is able to engage in practices that support healthy, secure attachment, she will likely interact differently with her children, who will consequently benefit (Bowlby, 1988; Siegel & Hartzell, 2003).

Such a practice becomes paramount when we take into consideration that individuals who are insecurely attached or have unresolved trauma are less likely to be able to provide secure attachment as caregivers because trauma reduces our relational capacity. To the degree that traumatized mothers are dominated by emotional and physiological arousal, they are at diminished capacity for providing empathy, support, and emotion regulation to others (Levine, 1997). Thus, practices, such as mindful parenting may serve to strengthen both parent and child's secure attachment, while also bolstering the bond between them.

Further support for a mindful parenting approach lays in the fact that parenting skills tend to breakdown when parents are under considerable stress, such as when readjusting from deployment and/or when coping with PTSD and other mental health issues. Thus, parent training interventions focused strictly on changing parenting behaviors may not be sufficient in addressing the overall impact of stress on parents, and in turn, their families (Belsky, 1984; Webster-Stratton & Hammond, 1997). In addition to parents forgetting to apply skills they have learned in parenting courses when under stress, the parent's own mental health issues may also diminish the extent to which parents can benefit from skills (Bögels & Restifo, 2014). However, mindful parenting offers an approach for parenting in high stress times, and for parents with psychopathology themselves. With the parent's stress at the center of treatment, this approach acknowledges that a child's difficult behavior may contribute to stress in the family. Mindful parenting presumes that we can only care for our children when we have sufficient resources to care for ourselves and for them. Thus, with its roots in MBSR, mindful parenting deals with the parent's resulting stress (Bögels & Restifo, 2014).   A major mechanism of change in mindful parenting is through promoting the capacity to observe one's own mental processes (Baer, 2003; Bialy, 2006; Bishop, 2002). By learning to observe thoughts as thoughts, as opposed to "truth," mothers are freer to respond to stressful situations with greater effectiveness rather than reacting out of habit (Miller, Fletcher, & Kabat-Zinn, 1995). Such a practice may be particularly empowering for parents, who in spite of life experiences that wired them towards high stress reactions, such as those trauma in childhood or adulthood, have the opportunity to make a choice of what kind of parent they would like to be.

Additionally, strengthening the capacity to identify and understand one's experience appears to contribute to secure attachment. Through these observations and an increased ability to sense nonverbal emotional signals and the internal world of others, mothers may develop more empathy and compassion for themselves and for their child. Subsequently, mothers are able to offer an attuned and understanding presence with their children. Thus, in relationship, the mother is paying attention to both her internal experience, as well as that of the child (Bögels & Restifo, 2014).

One study on mindfulness in parent-child relationships revealed that the mothers' mindfulness practice impacted positive child behavior outcomes, even though the children were not taught behavioral interventions (Singh et al., 2006). In another similar study, mothers reported decreased automatic and maladaptive responses to their children and attributed these improvements to changes in the way they related to all experiences in their environment, rather than to acquiring a set of parenting skills to change their child's behavior (Singh et al., 2007).

The Big 5 of Mindful Parenting

Stemming from the original MBSR program, various mindful parenting programs have emerged over the years; however, research suggests there are five common core components of a mindful parenting approach (Duncan et al., 2009).

- Exerting self-regulation in the parenting relationship

- Adopting a non-judgmental attitude of acceptance toward the self and the child

- Listening with full attention to the child

- Developing emotional awareness of the self and the child

- Directing compassion toward the self as a parent and toward the child.

1. Self-regulation in the parenting relationship. Mindfulness can directly impact the ability to attend to another individual through developing the capacity to respond versus react and have greater psychological flexibility. This capacity is cultivated through observing one's own experience. In helping the mother to observe her thoughts, emotions, bodily sensations and even action urges, mothers can develop a space or a pause between their perceptions and responses in a given situation (Bishop et al., 2004). Specifically, the process of learning to observe one's own experience neurologically disengages automatic pathways generated from prior learning history and enables input from the present moment to be integrated in a new way (Siegel, 2007). Parents may find it helpful to understand this pause as an opportunity to choose parenting behaviors that are consistent with their values and goals (Duncan et al., 2009).

2. Nonjudgmental acceptance: the seed of change. As discussed in earlier chapters, parents' behavior, verbal and nonverbal messages can communicate their beliefs about the world, themselves and others, which include the child. However, such communications may be biased by the parent's own desires for the attributes they would like their child to possess (Goodnow, 1985). Alternatively, a mindful approach to parenting involves a nonjudgmental acceptance of the traits, characteristics, and behaviors of self and child. However, it is necessary to clarify to parents that acceptance *does not mean approving* of the child's behavior. It is often helpful to make the distinction that while the child's emotional experience is valid, the response or the behavior is not always appropriate or effective. Rather, the concept suggests an acceptance of what is occurring in the present moment, as well as the idea that struggles are a normal part of parent-child relationships (Duncan et al., 2009).

3. Listening with full attention. Mindful parenting approaches combine full attention with listening, as directing one's full attention to the child connotes that parents are truly present and listening to their child, thus communicating that the child is seen and felt (Duncan et al, 2009). The quality of being present to experience that is cultivated through mindfulness communicates that this person is available and able to sense both herself and the child in an interaction. However to truly be able to give others our deepest attention, we must first develop the capacity to be present with our own experience. Such openness to the present enables one to connect and attune to another (Siegel, 2007).

This practice may be an integral building block to secure attachment, as in early childhood, parents must be attuned to both verbal and nonverbal cues for physical and emotional discomfort. Being fully attentive and taking the perspective of the child's experience allows the parent to meet the child's needs, and serves a protective function for young children whose wellbeing depends on the care of an attachment figure (Fonagy and Target, 1997; Siegel 2001). As children's language develops, parents attunement should extend to both the content of conversations, as well as tone of voice, facial expressions, and body language, in order to discern their child's needs or intended meaning (Duncan et al, 2009).

4. Emotional awareness of self and child. Helping parents cultivate the capacity for awareness of emotions in oneself and the child can lay the building blocks for teaching children how to identify, label and express their own feelings, which ultimately promotes childrens' self-regulation abilities (Gottman & DeClaire, 1997). Additionally, the ability to listen nonjudgmentally with full attention is contingent upon parents' ability to accurately identify emotions within themselves and their child. Thus, emotional awareness is the foundation of mindful parenting practices, as strong emotions have the ability to trigger automatic cognitive

processes and behaviors that are likely to undermine parenting practices. If parents are able to identify both their own and their child's emotions by bringing a mindful awareness to the interaction, they will be increase their ability to make conscious choices about how to respond, rather than reacting automatically to these experiences (Duncan et al., 2009).

Furthermore, engaging in emotional awareness of oneself allows veterans the opportunity to explore if strong emotional interactions with their child have connections with difficult or unresolved patterns in their own childhood (Bögels & Restifo, 2014). For veterans who struggle with PTSD or other mental health issues, this component of mindful parenting could permit them to examine how their deployment experiences may relate to their interactions with their child in an open and nonjudgmental manner. Increasing veterans' awareness of possible connections has the potential to allow the parent to be more present to what is occurring while interacting with the child, as well as be more empathic towards the child and compassionate towards their own reactions and inner experiences. Mindfulness paired with compassion may not only lead parents to feel empowered, but also may serve to prevent the intergenerational transmission of dysfunctional parenting and attachment patterns, whether stemming from the veteran's own childhood or military experiences

5. Compassion for self and child. Mindful parenting also requires active communication of empathy for one's child and for oneself as a parent (Duncan et al, 2009). Empathy entails both cognitive and affective domains, through perspective taking and having feelings of concern for others. Similarly, compassion is defined as an emotion representing the 'desire to alleviate suffering' (Lazarus & Lazarus, 1994). In nurturing compassion for oneself and for the child, parents may be more inclined to meet appropriate child needs and comfort distress that the child might be feeling.

Kristen Neff (2003), suggests that self-compassion entails a sense of common humanity and thus when applied to parenting practices, it may allow veterans to view their own parenting efforts less harshly and with greater forgiveness. By minimizing self-blame when parenting goals are not met, mothers may more easily reengage "in pursuit of parenting goals." Developing self-compassion may also reduce the threat of judgment from others regarding parenting practices and/or their child's public behavior. Moreover, it is plausible that when parents model self-compassion, their children can learn to adopt similar practices. The application of non-judgmental and intentional present-moment awareness to parenting and the adoption of a compassionate attitude can be considered the key features of mindful parenting that distinguish it from other positive parenting practices (Bögels & Restifo, 2014; Duncan et al., 2009).

Therefore, being a mindful parent involves adopting an attitude of acceptance and compassion in parenting and being sensitive and responsive to the child's needs. It implies being fully present and aware of one's own internal states and of the internal states of the child during parent–child interactions as well as exerting self-regulation in these interactions to choose parenting practices that are in accordance with the parent's values and goals (Bögels & Restifo, 2014; Duncan et al., 2009).

Overview of Mindful Parenting

Though various programs exists, this manual will review Mindful Parenting, an 8-week evidence-based course where parents learn to apply the skills of mindfulness to themselves and to their experience of parenting their children (Bögels & Restifo, 2014). As previously noted, Mindful Parenting is based on an adaptation of MBSR and Mindfulness Based Cognitive Therapy (MBCT). This program aims to assist parents with identifying interactions that lead to disconnection with their children, such as criticizing, projecting anger, and emotionally

withdrawing, and aiding parents to instead intentionally connect through listening, demonstration affection, responding calmly and modeling self-soothing behaviors.

It incorporates formal meditation practices, such as the bodyscan, mindfulness of the breath, body, sounds and thoughts, and emotions, as well as choiceless awareness, mindful seeing, mindful walking, and yoga. Audio recordings and handouts are made available from the developers of MBSR and MBCT, such as *The Mindful Way Through Depression* by Williams, Teasdale, Segal, and Kabat-Zinn (2007). Additionally, yoga practices, or a series of gentle lying, and sitting/standing yoga practices from the book *Full catastrophe living* by Jon Kabat-Zinn (1990) and in Mindfulness-Based Cognitive Therapy for Depression by Segal, Williams, and Teasedale (2012). Other mindfulness components include mindfulness of everyday activities focused on parenting and family activities, as well as practices in self-compassion and loving-kindness.

A unique feature of this course is the content on schemas, or patterns arising in the parent-child relationship that may be related to the parent's own childhood. This portion of Mindful Parenting may be quite relevant to the female veteran population given the high rates of trauma in early life and potential attachment-related issues. Schemas are addressed using experiential techniques adapted from Jeffrey Young's Schema-Focused Therapy (Young, Klosko, & Weishaar, 2003). A schema refers to states of thinking, feeling, and acting which reflect activation in the present moment of these early childhood experiences, of which the hallmark is negative emotions. Therefore, mindfulness is utilized as a practice to increase awareness of when schemas have been triggered.

This program also includes experiential exercises to increase parents' awareness of their personal limits in an effort to help them set limits with their child. Finally, Mindful Parenting concludes with exercises to help parents reconnect emotionally with their child after conflict.

Thus, the overall goal of Mindful Parenting is to incorporate mindful awareness into parent-child interactions in order to provide parents with the skills to interrupt their automatic patterns of interaction and shift their awareness in order to view their present-moment parenting experience within the context of the long-term relationship that they have with their child, as well as attend to their child's needs, while exercising self regulation and wise choice in their actions. Parent who engage in such a practice will be more likely to avoid getting caught in maladaptive parenting practices that stem from automatic behaviors and thereby are likely to have more quality relationships with their child.

Mindful parenting approaches emphasize addressing the parent's own stress, suffering, and symptoms in an effort to improve the parent-child attachment bond. Specifically, these approaches posit that for parents to give the child the gift of their deepest attention, they must have the capacity to be present to their own experience, as well as that of their child (Synder & Monson, 2012). Additionally, as veterans face unique parenting challenges, this manual will also review and incorporate practical interventions from an empirically supported parent-training program that specifically targets the post-deployment military population.

After Deployment, Adaptive Parenting Tools

After Deployment, Adaptive Parenting Tools (ADAPT), is a empirically supported group-based parent training program designed to target school age children of military families. It is based on a group intervention by Forgatch & DeGarmo (1999), called Parenting Through Change (PTC), which is aimed at buffering the mother's parenting skills immediately following

a divorce or separation. PTC has been shown to be feasible, acceptable, and engaging across a broad range of civilian populations with histories of exposure to trauma and stressful events or transitions (Gewirtz, Erbes, Polusny, Forgatch, & DeGarmo, 2010; Gewirtz & Taylor, 2009).

ADAPT addresses reintegration through instruction of strategies aimed at assisting parents to cultivate joint goals for their children, enhance problem-solving skills related to co-parenting, and learn and practice effective approaches to discipline (Gewirtz et al., 2014). The program distinguishes and promotes five positive parenting skills, including 1) skill encouragement, 2) positive involvement, 3) family problem-solving, 4) monitoring, and 5) effective discipline. Consistent with Mindful Parenting, ADAPT incorporates mindfulness techniques to improve parent's emotion regulation and socialization, while also promoting enhanced attention and response to their children's emotions (Gewirtz et al., 2011).

The interventions in this program may also be delivered in individual or family therapy, as well as prevention services, as these strategies may be important adjuncts to other treatment approaches. Recommendations for providers are to build on the resilience of the military family, address family stress within the context of the deployment cycle, and support stress management and emotion regulation of parents (Gewirtz et al., 2011)

Chapter 17

Mindful Parenting: An Integrated Treatment Model

Description

Rather than create an entirely new mindful parenting program, this manual utilizes Mindful Parenting as a foundation, supplemented with aspects of the ADAPT curriculum, in an effort to cater specifically to military families. This approach focuses on providing psychoeducation to female veterans on the impact of deployment-related stressors on parenting and their child's emotional wellbeing, while providing coping skills and practical parenting tools to aid the veteran in repairing and strengthening the attachment bond following deployment. While Mindful Parenting was developed as a group-based program, it could reasonably be delivered in an individual or as a prevention/early intervention treatment.

Format Considerations

The Mindful Parenting protocol is best suited for a group setting that generally consists of 8–16 parents who come alone or in couples. The group setting may be of benefit to parents by giving them the sense that they are not alone in their struggle, while also helping them practice a mindful stance of non-judgment and compassion within the group. In addition to modeling from the clinician, other group members may serve as positive models for the veteran. The Mindful Parenting course is appropriate for parents who may have a variety of mental health concerns with children of all ages (Bögels & Restifo, 2014). Individuals who may not be appropriate for this treatment include those who are actively psychotic, expressing suicidal or homicidal ideation, or are unable to commit to the full treatment duration. Additionally, though little research currently exists, it is reasonable to consider that the following curriculum may be adapted for individual sessions.

Clinical Interview

The Mindful Parenting manual suggests arranging an interview that is broken into three parts: 1) all family members present, 2) parents separate from the children, and, 3) all family members.

In the first meeting, the clinician describes benefits reported by other parents after taking the course, such as reduced stressed, increased ability to deal with stress, reduced reactivity to their children, and increased acceptance of their children and of themselves as parents. Additional benefits to describe also include parents' report of feeling closer to their children, and noticing improvements in their own emotion state, as well as their children's behavior. During this meeting, the concept of mindfulness is introduced and discussed as the foundation for the parenting model. If willing, family members together may participate in a brief breath meditation to give them each a sense of what practice will consist of in the course. In an effort to get to know the family members and their dynamics, clinicians can ask what do they do together as a family, what is the family atmosphere like, and who do they turn to within the family when a problem arises? Questions related to strengths may also be incorporated, such as what areas of parenting does the veteran feel most satisfied with.

Moreover, clinicians may gather information from the child(ren) about their experience, such as what they like, what they wish their parent would do differently, or what changes they would like to see in their relationship with their parent and family. After building some rapport with the family, clinicians can proceed in asking about specific parent and child issues. During this time, parents will fill out questionnaires (*see Chapter 18)* (Bögels & Restifo, 2014).

The second part of the interview focuses on gathering information from parents about their family of origin experience. Discussion should also include assessment of traumas, including

physical, sexual or emotional abuse, as well as neglect. While this portion of the interview is intended to focus on childhood experiences, clinicians can also include an assessment of military trauma and deployment stress to adapt the interview for veterans. Bögels & Restifo (2014) suggest that when parents endorse these experiences, clinicians can talk with them about how those occurrences may impact their experience in the course and whether they feel comfortable proceeding.

Given the potential for comorbid mental health issues in the female veteran population, clinicians should use their best judgment to determine if the veteran is appropriate and stable to engage in this protocol and further assessment of symptoms may be warranted. In addition to assessment, this portion of the interview can be used to attain goals and motivations for the course. Subsequently, commitment to attendance and regular practice are discussed in order to assess the participants' ability to engage in treatment at this time. Furthermore, expectations are reviewed and clarified (e.g. parents will not be getting advice on how to parent).

In the separate meeting with the child(ren), clinicians can obtain further information from the child about their experience of being parented and any other difficulties they experience in the family. The interview concludes with the whole family and clinicians provide a summary of information gathered. Time should be left for remaining questions or concerns (Bögels & Restifo, 2014).

Themes of the Protocol

Automatic parenting. The focus of the first session is becoming aware of parenting on automatic pilot, particularly when under stress. In an experiential format, this session presents a typical parenting stress situation and connects parents' reactions to the fight–flight–freeze stress reaction by focusing on body sensations, emotions, thoughts, and action tendencies. Providing

parents with a brief explanation of the brain's stress response highlights the rationale of the group, which is to pause before reacting, particularly in times of stress in an effort to make more deliberate and intentional parenting choices (Bögels & Restifo, 2014). Clinicians may reference the hand brain model to illustrate this system (Siegel, 2012). Woven into this discussion, clinician's can provide psychoeducation on common reactions to deployment and stressful or traumatic experiences. Parents' stress reactions should be brought into the context of the attachment relationship (Bögels & Restifo, 2014).

Moreover, in an effort to be relevant to female veterans, consideration should also be given to the impact of other returning issues, such as physical injury, substance abuse, couples issues and other mental health issues on the attachment bond (Miller et al., 2010). Additionally, As the ADAPT program recommends emphasizing a strength and resilience-based approach with military families, clinicians may also elicit strengths of the parent, child, and family, as well as the veteran's values as a parent. Clinicians may also elicit strengths and existing effective parenting practices by bringing veterans' attention to ways the family has successfully confronted and grown from general stressors or other significant military experiences (Gewirtz et al., 2011).

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Body Scan Raisin Exercise	Morning Stress Exercise	Body Scan Child as Raisin Mindful Routine Activity Mindful First Bite

Beginner's mind parenting. Parents discuss their experience observing their child with beginner's mind. Parents may discover positive qualities about their child that may be overlooked due to focusing on the child's difficulties. Parents may also express judgments and preconceptions about their child that pose challenges to viewing the child with beginner's mind. Clinician's can facilitate a discussion around the tendency to become biased towards seeing the child in a negative light, particularly if the child has been labeled or given a mental health diagnosis (Bögels & Restifo, 2014). As children of veterans may be vulnerable to mental health difficulties, this topic may be especially salient. Thus, the stance of beginner's mind can be used to help parents expand their experience of their child to include the totality of the child in that moment.

A second component in this theme is cultivating an attitude of kindness towards one's own emotional states, such as when parents are struggling or are under stress. Incorporating perspective taking with the Morning Stress Exercise can be used to highlight how parents may have an easier time extending kindness and empathy to another struggling parent rather than to themselves (Bögels & Restifo, 2014).

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Body Scan Breathing meditation Seeing meditation	Morning Stress from perspective of a friend Gratitude practice	Bodyscan Breath meditation Mindful Routine Activity with your child

Reconnecting with our body as a parent. Parents are encouraged to increase awareness of body sensations when parenting, experiencing pleasure, or experiencing parenting stress through observing and labeling during the mindfulness practice. Psychoeducation is provided on how the body provides signals of stress and physical limits when parenting. Mindfulness can be emphasized as the foundation upon which parents cultivate awareness of their personal stress cues. Moreover, becoming aware of the body's response to parenting stress may be the first step towards parents' willingness to hold and accept their experience rather than fighting it (Bögels & Restifo, 2014).

Building on the previous themes, parents are asked to recall a recent stressful parenting interaction and to notice their bodily sensations, feelings, and thoughts, with the addition of noticing their attitude or stance towards themselves (e.g. critical, judgmental, guilty). Parents are asked to hold this stressful experience with an attitude of kindness and compassion, as they did for a friend in the previous sections exercise. Clinicians may find it useful to clarify what self-compassion is and is not in order to dispel any misconceptions. Mindful Parenting (Bögels & Restifo, 2014) utilizes this exercise to highlight Kristen Neff's (2011) three aspects of self-compassion:

1. Awareness (that this is a moment of suffering)
2. Self-kindness (responding with kindness to your own suffering)
3. Connecting with our common humanity (all parents make mistakes)

It is suggested that these topics continually be related back to parent-child interactions. Specifically, Mindful Parenting notes that this practice, in addition to offering parents a moment for self-compassion and taking a self-compassion break can interrupt escalating conflict and emotional reactions.

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Breath and body meditation	Morning Stress from perspective of a friend Gratitude practice	Exploring bodily reactions to parenting stress Imagining parenting stress: self-compassion

Responding rather than reacting to parenting stress. As veterans will have been working towards cultivating awareness of parenting stress, parents will explore the various automatic behavioral reactions that occur when their stress response is triggered, as well as how thoughts may contribute and exacerbate the stress reaction. Mindful Parenting notes that parents' automatic reactions stem from several sources, including (1) evolutionary survival mechanisms, (2) our tendency to grasp for what we like and reject what we dislike, (3) how we experienced our relationship with our own parents, and (4) our lack of self compassion, as well as lack of felt partner support. When working with the veterans who have been deployed, and/or experienced stressful or traumatic events, it will be important to consider how those experiences may also contribute to parents' automatic reactions. Clinicians can introduce the 3-minute-breathing space, which can help parents to pause and step out of automatic stress reactions and respond more intentionally (Bögels & Restifo, 2014).

When parents have a history of stressful or traumatic experiences that have the potential to interfere with their response to their child, the clinician can reference back to the psychoeducation provided in the first session on common reactions to trauma. This information

can be used to help the veteran understand how her history can affect perceptions of and

interactions with her child. Thus, strategies, such as the 3-minute-breathing space can aid in

emotion regulation, and may be particularly helpful for veterans coping with posttraumatic

symptoms upon returning from deployment (Hoge et al., 2004).

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Breath, body, sounds and thoughts meditation 3 minute breathing space	Imagination parenting stress	Breath, body, and sounds meditation 3 minute breathing space

Parenting patterns and schemas. As part of the process of recognizing automatic

parenting patterns, veterans will be encouraged to explore whether their interactions with their

child bare any similarity to patterns in their relationship with their own parents or caregivers. As

schema modes are action oriented and related to implicit memory, parents rarely have awareness

that they have been triggered into a schema mode. Though schemas are not inherently negative,

Mindful Parenting focuses on maladaptive schemas, which are characterized by flooding of

intense negative emotion, cognitions, body tension, and strong urges to act (Bögels & Restifo,

2014).

Thus, mindful awareness can aid parents in recognizing when their childhood experiences are being triggered in the present moment with their child. This may be particularly relevant for female veterans parent-child attachment relationships, as the transmission of parents' attachment patterns from childhood to their own children is through mental representations or schemas (van IJzendoorn, 1995). Mindful awareness can help parents recognize patterns of repetition, while also aiding them in pausing before reacting to their children and noticing that the current emotions belong to a situation of the past, rather than the current one with their child. Similarly, clinicians may also help female veterans recognize when their reactions are related to past stressful or traumatic military experiences that may not have origins in childhood. In doing so, parents are able to create a space to make a conscious decision of how to respond. Clinicians can also help veterans to bring self-compassion and acceptance to their experiences as a child when these emotional states arise (Bögels & Restifo, 2014).

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Breath, body, sounds, and thoughts meditation Walking meditation	Pattern recognize exercise Holding strong emotions with kindness	Breath, body, sounds, and thoughts meditation 3 minute breathing space when your child is misbehaving

Conflict and parenting. This section focuses on conflict using Siegel and Hartzell's (2003) concept of rupture and repair. When parents react automatically, a child may feel so hurt or angry that he or she experiences a rupture in the attachment relationship. However, Siegel and Hartzell emphasize that ruptures are normal and occur in all parent–child relationships. Research suggests the most important piece of this process is to encourage parents to "repair" the relationship, particularly because children and adolescents are less equipped to be able to approach parents to discuss the rupture, thus a child's silence does not necessarily mean they are not experiencing pain (Diamond & Liddle, 1999).

Repairs entail returning to the child when emotions have settled and revisiting what happened in an open, nonjudgmental, and loving manner. Parents are invited to elicit their child's emotional reaction and empathize with it, thereby validating their emotional experience. Clinicians may help parents with active listening and attuning to the child's emotional state. One of the many challenges of approaching a repair is helping parents hold both their emotional experience and their child's simultaneously. In this way, parents have the opportunity to practice perspective taking and extending compassion towards oneself and one's child (Bögels & Restifo, 2014).

Such interactions help children understand and accept their own emotional experiences, as well as develop the same empathy and compassion for themselves that the parent is striving towards. Most importantly, approaching conflict in this manner restores the safety and closeness of the attachment relationship, increasing the likelihood that children have a safe haven when they are upset (Bögels & Restifo, 2014).

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Choiceless awareness	Imagination: parent-child conflict + perspective, rupture and repair	Rupture and repair 3 minute breathing space Gratitude practice

Love and limits. This section continues to cultivate the practice of self-compassion by introducing the formal loving-kindness practice. This practice is powerful as it cultivates parents' ability to intentionally offer love and compassion to themselves and their children. Mindful Parenting posits that regardless of past conflicts and struggles, each parent has the capacity to extend love and kindness to their child. Bögels & Restifo (2014) note that such an exercise can elicit a variety of reactions from parents, including: painful feelings related to their own childhood, feelings of shame, noticing a lack of compassion for themselves, as well as a softening towards themselves and their children.

Secondly, setting limits is reframed as a form of "ruthless compassion," since doing so is a means of showing the child love. As parents have been gaining awareness of when their own boundaries and limits have been crossed, they are now asked to respond from this awareness. Setting limits is viewed as a way of taking care of ourselves while providing the structure that our child needs. We also explore obstacles to setting limits, for example, related to our own experience with limits in our childhood or to the particular difficulties our child has. Though

many parents may seek out treatment due to wanting concrete tools for what to do with their child, Mindful Parenting deliberately addresses limit setting towards the end of the treatment in an effort to give parents the opportunity to develop a foundational mindfulness practice from which they can approach limit setting.

Specifically, parents are invited to use the connection they've cultivated with their own bodily and emotional processes as a signal for when and how to approach limit setting. Clinicians can invite parents to bring mindful awareness to the bodily sensations, thoughts, and feeling that arise during limit setting situations and subsequently slow down automatic reactions and better understand their own experience, as well as barriers to limit setting. Parents may experience difficulties setting limits for a variety of reasons, including their own mental health issues, those of the child, their own culture/upbringing, past traumas, or situational stressors such as marital distress, divorce, or being a single parent (Bögels & Restifo, 2014).

Though Mindful Parenting does not address specific limit-setting or discipline techniques, Bögels & Restifo (2014) note that many parents intellectually know how to set limits, but still have difficulty doing so due to their own emotional experience. Moreover, it is notable that parents struggling with their own emotional or behavioral issues tend to do poorly in behavioral parent training courses (Sonuga-Barke, Daley, & Thompson, 2002). Specifically, veterans may have difficulty enacting developmentally appropriate discipline and behavior management due to emotion regulation issues.

Nevertheless, clinicians may use their judgment to supplement this section with specific techniques if a skills deficit is found to be a barrier. For example, the ADAPT program suggests that to help parents regulate emotions and feel a sense of control and reduce the likelihood for negative reactions, parents can use a script for giving directions that is short, clear, specific and

given in a neutral manner. Clinicians may role-play such practices with parents so that they may be internalized and more accessible when needed. Suggestions for discipline are also made using the 5:1 ratio in an effort to decrease ineffective and coercive parenting practices that commonly occur under stress. This ratio simply means providing five supportive, encouraging or rewarding behaviors or statements for each correction or consequence given to a child (Gewirtz et al., 2011).

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Loving-kindness Self-compassion	Gratitude practice	Practice of own choosing

A mindful path through parenting. As Mindful Parenting comes to a close, clinicians can acknowledge the natural tendency to want to have "arrived" or "achieved" mindfulness, and reframe these practices as an ongoing practice or a path rather than a destination. At this time, parents are invited to reflect on their experience, what they have learned, and any changes they have seen. Space should also be given to challenges that have arisen and continue to arise with finding time to practice, sitting with difficult emotions, and applying mindful awareness to their interactions with their child. Attention may also be given to any changes parents have observed in their child. This is supplemented by a meditation on reflection, which concludes with setting an intention for proceeding with the Mindful Parenting practice (Bögels & Restifo, 2014).

Mindful Parenting also revisits a gratitude practice at this stage, asking parents "What are three things you feel grateful for in your life?" Clinicians may invite parents to bring in an object, drawing, poem, song, or narrative that symbolizes their personal experience with the treatment. At the closing of Mindful Parenting, clinicians can aid parents in creating a concrete and specific mindful parenting plan for the next 8 weeks (or until follow-up) (Bögels & Restifo, 2014). Additionally, parents may write a narrative or a letter to later be sent to themselves in an effort to remind them of take-away or key messages.

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Bodyscan Loving-kindness	Symbolic objects Narrative Gratitude practice	Practice of own choosing

Follow-up session. Clinicians may find it helpful to schedule a follow-up session 8 weeks after finishing the Mindful Parenting protocol. Scheduling this in advance may aid parents in remembering practices they have learned, as well as boosting the mindfulness stance and skills they've earned. The follow-up session may serve as an opportunity to check-in, address questions about the practice, and discuss ways to help parents remember to be mindful. At this time, clinicians may administer follow-up measures and assess whether parents may need additional treatment or support (Bögels & Restifo, 2014).

Mindful Parenting suggests postponing termination discussion and goodbyes until the follow-up session in order to allow parents to focus their attention on self-reflection. Such conversations are supplemented with various meditations (Bögels & Restifo, 2014).

In Session Formal Practice	In Session Mindful Parenting Practice	Home Practice
Sitting meditation Stone meditation	Mountain meditation for parents	Practice of own choosing

Additional interventions. Though the Mindful Parenting course aims to cultivate a parenting stance that facilitates secure attachment post-deployment, such an approach can be applied to parenting at any stage of deployment. However, additional attachment concerns may arise in the pre-deployment and deployment phases. Thus, the subsequent section includes practical recommendations that clinicians can help female veterans implement in order to prepare children for a breach in the attachment relationship, as well as maintain it during deployment. As such, recommendations draw on research from the ADAPT program (Gewirtz et al., 2011).

Chapter 18

Attachment Strategies Throughout Deployment

Pre-Deployment: Preparing for the Attachment Breach

Rationale for pre-deployment preparation. One of the major stressors of the deployment cycle for children is that they may attribute their parent leaving to their own fault (Laser & Stephens, 2011). Thus, by involving them in pre-deployment preparation, veterans can facilitate a more accurate understanding of the deployment process. Specifically, clinicians can educate parents on engaging in child-focused preparation and communication strategies that maintain the attachment relationship during deployment in an effort to decrease the adjustment period and stress experienced by military children. However, few parents engage in such preparation due to myths that children are too young to understand deployment. Additionally, parents may hesitate to have such discussions if there is uncertainty about what might happen. However, parents who prepared their children for deployment demonstrate significantly lower scores on parenting stress measures than those who did not, which suggests that such preparations may have enduring influence on the level of overall family stress (Gewirtz et al., 2011).

Clinicians can provide psychoeducation on developmentally appropriate ways to communicate with children about deployment, which can promote family resilience and aid in making appropriate preparations for the deployment cycle. It may be helpful to clarify for parents that while preschool children have the capacity to understand and psychologically grieve a parent's absence during deployment, infants and young children may lack such a cognitive understanding and may even require continual explanations by the at-home caregiver of the mother's absence once deployed (Paris et al., 2010). As such, supporting veterans in bolstering

the parent-child attachment bond prior to deployment may be crucial for those with very young children. Generally, preparing children for the changes and disruptions that occur during deployment should include recognition of the child's needs.

General considerations. As a large majority of military children are under the age of 5, the following recommendations focus on preschool-aged children. Clinicians can educate parents that preparation should include discussions on what is happening and what to expect in developmentally appropriate language. For young children, this may entail methods, such as play, drawing, and other activities. Clinicians can help parents create a safe environment where children can share emotions and concerns, while preparing to respond in simple language. Clinicians may provide instruction on active listening and reflection skills that would aid parents in acknowledging their child's feelings, as well as appropriately sharing their own, while emphasizing that the child will be cared for and kept safe. Clinicians may also facilitate or provide psychoeducation on how parents can work with their child to develop a plan to stay connected. Furthermore, clinicians can help parents understand that transitions, such as deployment are anxiety provoking for both adults and children and that minimizing other transitions, including moving to a new school or daycare for example may be quite stressful, even if they are more convenient for the at home caregiver (Gewirtz et al., 2011).

Direct and indirect contact: fostering digital attachment. Pre-deployment preparations may include facilitating the at home caregiver's efforts to include the female veteran in the child's daily routine, as doing so has resulted in healthier adjustment to reintegration (McCubbin, McCubbin, Thompson, Han, & Allen, 1997).

Moreover, pre-deployment preparations may be made to foster parent-child attachment from a distance, whether direct or indirect. These direct or indirect methods may be done through media or other preparations put in place in the pre-deployment phase (Palkovitz, 1997).

For direct means, such as video chatting or phone conversations, the veteran can make a plan during pre-deployment for the frequency and form of communication. While clinicians can encourage veterans to schedule regular contact in order to foster a sense of predictability and stability (Miller et al., 2010), attention should also be drawn to potential downfalls of direct communication. These may include unpredictable schedules, security restrictions, technical problems, or miscommunication (Hinojosa, Hinojosa & Högnäs, 2012). Barriers for young children include difficulty in shifting attention to an impromptu video or phone call and short attention span, which may be perceived as rejection or disinterest by the deployed parent. Furthermore, direct communication creates a "joining on the warfront," and children may have increased awareness of the potential dangers and may become fearful, particularly if communication suddenly cuts out (Paris et al., 2010).

Indirect means include incorporating the parent's psychological presence through multisensory reminders. Such reminders may be particularly important for infants, especially when they can see the parent is thinking of them. For example, the veteran may record a video saying, "mommy is thinking of you" or "mommy misses you." Other examples include care packages, letters, pictures in the home, prerecorded video or audio of bedtime stories or other personal messages, as well as brief recordings from the veteran with corresponding photos and letters. As babies recognize parent's smell, voice, and face by two months of age (Brazelton & Greenspan, 2000), taking steps during pre-deployment to create the symbolic presence of a parent may be very useful. Thus, pictures, recorded videos, and audio recordings are

developmentally appropriate ways of facilitating attachment and the psychological presence of the absent parent (Miller et al., 2010).

Additional preparation during the pre-deployment period may include pre-planning family events, such as birthdays and holidays to include the veteran by pre-arranging cards, gifts, or flowers to be sent to and from her at those times. Moreover, keeping parenting practices consistent throughout the deployment cycle can be challenging, thus clinicians can facilitate a united front between caregivers to remind them both of common parenting goals, as well as to maintain predictability and consistency. Thus during predeployment, parents can discuss goals, values and expectations of each parent's roles and responsibilities to assist in the transition of upcoming deployment (Gewirtz et al., 2011).

Deployment: Maintaining the Attachment Bond

Help caregivers maintain routines, rituals, and rules. During deployment, the at home caregiver can help combat children's sense of loss by keeping daily and weekly routines consistent and predictable, as it is not uncommon for military families to put projects and activities on hold until the deployed parent returns. The at home caregiver should also maintain family rules and expectations agreed upon with the deployed veteran regarding school, chores, health, and safety (Miller et al., 2010). With the stress of parenting alone, the at home caregiver may provide inconsistent or more lenient limits. However, rules and boundaries for children's behavior protect both the child and caregiver (Howard, 1996). As such, clinicians working with military families at this time may provide parents with specific and concrete tools for effective limit setting, such as through teaching time out, in order to increase security and predictability. Doing so may decrease any feelings of powerlessness towards the child's behavior that the at home caregiver may experience (Gewirtz, et al., 2011).

Maintaining rules, routines, and rituals serves multiple purposes, including: 1) provide stability in the face of stress and unknown circumstances, 2) reassure the deployed parent that she knows what is happening at home despite her absence, and 3) provide a shared family narrative or an expectable series of events in the family (Gewirtz et al., 2011; Sheppard, Malatras, & Israel, 2010).

Supporting children's coping. As previously mentioned, the at home caregiver may face a considerable amount of stress while the female veteran is deployed due to taking on additional roles and responsibilities, all while coping with their own experience of the deployment. Thus, it is paramount that the at home caregiver continue to be emotionally and physically available to the child by taking time to listen and respond to whatever worries the child is experiencing. Again, the clinician can provide psychoeducation on children's cognitive capacities and how much information children can comprehend at their specific developmental stage. Additionally, clinicians can role-play situations in which difficult topics may surface in order to support both caregiver and child (Gewirtz et al., 2011).

Post-Deployment

While the Mindful Parenting program was reviewed as a treatment option for returning female veterans returning from deployment, this section discusses some general considerations in strengthening and re-establishing the attachment bond post-deployment.

Consistency and availability. Though there is no clear-cut recipe for renewing the attachment bond, prior chapters have highlighted the important of consistency and availability in developing a safe and trusting attachment bond. This may be a frustrating process for parents, particularly for those who may have seen a change in the quality of attachment following deployment. Just as consistency is paramount for children during a parent's deployment,

continuing or even re-establishing family routines and traditions may help both children and families reacquaint themselves with normalcy (McFarlane, 2009).

Additionally, Compton & Hosier (2011) suggest the parents talk in a soft soothing tone and be responsive to the child's emotions. Specifically, it is recommended that parents offer to hold or huge the child when he or she is upset. Parents should also remain available when the child reaches for them. Such behaviors can send the message that the parent is attuned and available to the child. It is also recommended that parents refrain from forcing their child into situations where he or she may be uncomfortable, in an effort to build a sense of safety. Lastly, parents should take time to play with their child in order to build positive affective experiences and bonding during proximity.

Psychoeducation. As it is not uncommon for veterans to return home with physical injuries or mental health difficulties, clinicians can help parents think through the necessity for and appropriateness of discussing these issues with their child. Price (2014) recommends that parents can explain the reasons for the traumatized parent's difficulties, while being cautious not to burden the child with graphic or inappropriate details. Parents should highlight that their symptoms are not related to the child and thus he or she is not to blame.

Clinicians can aid parents in deciding what level of detail and information should be provided given the age of the child. Price (2014) notes that parents may prefer to have assistance with what they say to their children through therapy or written materials. Similarly, media and other resources directed at children going through the deployment cycle can be quite useful, particularly when read or viewed as a family. Gewirtz et al. (2011) suggests Sesame Street's "Talk, Listen, Connect" program for young children, family resources from the Defense Centers

of Excellence in Psychological Health's www.afterdeployment.org Web site, and books written

in the voices of children and youth (e.g., Sherman & Sherman, 2009).

Chapter 19

Clinician Issues

Assessment of Outcomes

Several measures utilized to assess the efficacy of the Mindful Parenting interventions. In order to most accurately assess factors targeted by this program, the following may be assessed: parental stress, parental-child attachment, child behavior, parenting skills, and mindfulness. Parents can complete the *Parenting Stress Index*, which specifically identifies areas of parenting and child-related stress, compared with general life stress. There are six child-related subscales within this measure, including, Adaptability, Acceptability, Demandingness, Mood, Distractibility/Hyperactivity, Reinforcement of Parent (Abidin, 1990).

Secondly, the *Parent Relationship Questionnaire* (*PRQ*) will be used to assess the parent's perception of various factors within the parent-child relationship. Scales included in this measure are attachment behavior, child discipline, parent-child communication, parental involvement, parenting skills, relationship quality, and school adjustment (Rubinic & Schwickrath, 2010). A benefit to this measure is that there it contains embedded validity scales to identify any carelessness or exaggeration in each parents' reporting style.

Thirdly, parent parents may complete the *Child Behavior Checklist* (CBCL), to identify current behavioral problems their child may be experiencing. The CBCL assesses the child's behavior, according to the parent's report, in the following domains, Anxious/Depressed, Withdrawn/Depressed, Somatic Complaints, Social Problems, Thought Problems, Attention Problems, Rule-Breaking Behavior, and Aggressive Behavior (Ivanova et al., 2007). Information from pre- and post- tests can be used to identify the overall impact of Mindful Parenting on child

behavior in the home. Additionally, the measure may highlight specific areas of child behavior that are the most impacted by the treatment program.

Lastly, in an effort to measure mindfulness, clinicians may administer the *Five Facet Mindfulness Questionnaire* (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Baer et al., 2008). This questionnaire is a 39-item measure with five subscales: observing, describing, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. Research on this measure suggests that most mindfulness facets are significantly related to meditation experience and psychological well-being and construct validity is supported (Baer et al., 2008).

Chapter 20

The Mindful Therapist

A mindful stance has been shown to positively impact interpersonal relationships, particularly the way we relate to others (Siegel, 2007; Wallin 2007). In an effort to aid the veteran in increasing secure attachment through observing and being present, the clinician should adopt a similar present focused stance as well. Doing so can model moment-to-moment awareness of experience, as well as help clinicians to be present to the experience of the veteran (Duncan et al, 2009). Specifically, Siegel (2007) suggests that mindfulness cultivates a particular quality of presence that signifies openness and availability to receive what the other person is bringing to the interaction, as well as one's own participation in the interaction; as Siegal (2007) puts it, "to be aware of her own awareness" (p. 263). Through this present stance, the clinician may be better positioned to notice, attune and attend to the process between him/herself and the veteran (Duncan et al, 2009). It is through this stance that the clinician can foster presence and self-awareness in the other (Wallin, 2007).

Compassion Fatigue and Self-care: Enhancing Well-being and Avoiding Burnout

Clinicians are required to have compassion and empathy when working with clients, yet this can contribute to unintended consequences. Compassion fatigue means that as a result of exposure to the clients' difficulties, as well as ongoing empathy, clinicians can experience a reduction in the capacity or interest in being empathic towards a client, "There is a cost to caring. Professionals who listen to clients' stories of fear, pain, and suffering may feel similar fear, pain, and suffering because they care" (Figley, 1995, p. 1). Compassion fatigue was originally addressed by Charles Figley (1995) and has seen been applied to trauma therapists. Other common terms include secondary traumatization and burnout. However, it is notable that some

definitions of secondary traumatic stress refer to the development of PTSD symptoms in the clinician due to exposure to the traumatic experiences of the client (Figley, 1995).

Symptoms of compassion fatigue can occur quickly and unexpectedly and may include emotional and physical exhaustion, a tendency to withdraw and high levels of stress (Gough, 2007). Other common symptoms include irritability, helplessness, and a sense of isolation, depression and confusion (Bush, 2009; Huggard, 2003). The detrimental impact of compassion fatigue affects clinicians' capacity for attention, concentration, and decision-making, which undoubtedly diminishes their clinical effectiveness (Christopher & Maris, 2010).

Risk factors. While mental health providers, particularly those working with trauma are uniquely at risk for compassion fatigue, various other risk factors have been identified in the literature. These include the clinician's prolonged exposure to suffering, ability to empathize, response to the client, sense of self-efficacy, and life circumstances and stressors (Figley, 1995). Additionally, clinician's own experiences of trauma have been found to be a risk factor for compassion fatigue. Specifically, being exposed to a client's traumatic experience, reactions, and subsequent beliefs can trigger a clinician's reaction to his or her own experience of trauma (Pearlman & Saakvitne, 1995). Lacking clear boundaries in therapy, as well as having idealistic treatment goals may put clinicians at further risk. Younger age has also been associated with increased risk for compassion fatigue, potentially due to lack of preparation, role ambiguity, heavy caseloads, and changing environments. Finally, those who have limited or lack of good supervision, as well as large caseloads appear to be at risk for developing compassion fatigue (Bush, 2009; Figley, 1995).

Of note, the suggested approach in this manual does not specifically call for revisiting the traumatic event, such as in evidence-based treatments that specifically address PTSD (e.g. Prolonged Exposure or Cognitive Processing Therapy). However, it is possible that constant exposure to stories about veteran's deployment and post-deployment struggles has the potential to wear on clinicians' well being as well.

Protective factors. Nevertheless, researchers have found that the following traits increase resilience: adaptive coping, mental flexibility, perseverance, a positive outlook or a sense of hope, social support, spirituality, creativity, good problem-solving skills, and an ability to learn from past difficulties. Associated with resiliency among professionals working with trauma are an easygoing temperament, flexible attitude, social support from colleagues, family, friends and community; a spiritual connection; a wife range of varied strategies and resources for coping; and a positive worldview (Katz, 2016).

A supportive workplace has also been found to boost resilience, including quality supervision, peer consultation, and trauma-specific trainings, including vicarious trauma. Maintaining clear and appropriate boundaries has been found to be important for therapists working with MST, and also appears to be important when the added layer of working with the child through the parent is present. Lastly, an awareness of the potential for and impact of compassion fatigue is important and highlights the need for continual self-assessment and awareness (Katz, 2016). Again, a mindful stance towards one's own experience as a clinician has the potential to aid in such self-awareness.

Self-care. Suggestions to improve compassion satisfaction and decrease compassion fatigue include stress management, relaxation and contemplative practices, as well as general self-care, including exercise, rest, and a balanced diet (Brown, Marquis, & Guiffrida, 2013).

Additionally, clinicians working with trauma should monitor changes in their beliefs related to trauma, such as safety, trust, control, esteem, and intimacy, as well as make efforts to balance personal and professional life (Pearlman & Saakvitne, 1995; Salston & Figley, 2003). Clinicians may benefit from beginning their day with a relaxing ritual, such as meditating, journal writing, stretching, or reading. It is also recommended that clinicians engage in healthy eating, exercising and sleeping habits to increase energy and resilience in the face of daily stress. While often counterintuitive in a helping profession, clinicians are encouraged to set healthy boundaries in an effort to protect their time and wellbeing. Lastly, disconnecting from technology for a period of time each day may allow you to reboot (Smith, Segal & Segal, 2016).

In line with the treatment outlined in this manual, mindfulness may be a strong option for enhancing compassion satisfaction and decreasing compassion fatigue in a profession where empathy is a blessing and a curse (Figley, 2002). Literature points to the aforementioned benefits discerned from MBSR, such as positive affect, self-compassion and overall well-being. Mindfulness-based interventions have been shown to increase empathy in medical students (Shapiro, Schwartz, & Bonner, 1998), to decrease stress in nurses (Beddoe & Murphy, 2004) and to decrease burnout symptoms and improve relaxation and life satisfaction in nurses and nurse aids (Mackenzie, Poulin, & Seidman-Carlson, 2006). Additionally, therapists in training have been shown to have a decrease in stress, rumination, anxiety, and negative affect while increasing self-compassion and positive affect using mindfulness-based approaches (Shapiro, Brown & Biegel, 2007). Thus, it is plausible that a mindfulness practice may also be a protective factor against compassion fatigue and may increase compassion satisfaction among those working with traumatized individuals.

Given the evolving demands of today's fast paced world, Duke University has created an integrative medicine wheel of health aimed at prevention and intervention for wellbeing. It highlights nine key areas of health and wellness while emphasizing the interconnectedness of body, mind, spirit, and community in working preventing, treatment, and working towards optimal wellness. At the center of the wheel lies mindfulness, which may enable clinicians to recognize symptoms as they emerge; thus for prevention and treatment, mindfulness is critical. Within the next circle of the wheel is self-care, which may include relationships, the physical environment, nutrition, movement and exercise, the mind-body connection, and personal growth and spirituality. Lastly, the outer circle represents professional care, as early recognition of symptoms is key to diagnosing physical and mental health issues. This may include pharmaceuticals and supplements, preventive medicine, and conventional and complementary and alternative medicine treatments (CAM). CAM treatments may consist of yoga, acupuncture, guided imagery, mindfulness, and hypnotherapy (US News, 2010).

Cultural Considerations

The potential adverse effects of deployment put veterans and their families at elevated risk for emotional and behavioral difficulties. With a growing number of female veterans who are also mothers, there is a compelling need for expanding the delivery of mental health services to veterans and their children. As such, clinicians need to understand the unique and varying needs of female veterans and military families and be prepared to use a range of interventions that best serve the veteran and her child. Each veteran's experience of life in the military and deployment and its sequelae are unique and multilayered. Thus, there is a serious need for clinicians to understand how to best tailor interventions and treatment in a culturally competent manner.

Acceptance-based approaches and culture. Acceptance-based behavioral therapies, such as Mindful Parenting, aim to validate, normalize, and compassionately approach distress before encouraged behavior that is consistent with one's values. Such an approach may resonate with individuals from minority or marginalized backgrounds that may view the mental health system with distrust or may assume they will be blamed or misunderstood for their current circumstances. Additionally, the emphasis of values specific to the individual may allow clinicians to consider the impact of cultural and familial factors that may impact their parenting behaviors. Different than other mental health treatment, acceptance-based approaches, consistent with a mindful and compassionate stance, do not judge or evaluate one's behavior as adaptive or maladaptive, but rather viewed as either bringing the individual closer to or further from her values (Roemer & Orsillo, 2010).

Furthermore, the inclusion of psychoeducation in Mindful Parenting may reduce the stigma and increase engagement for veterans whose cultural backgrounds stigmatize mental health services. Nevertheless veterans whose cultural context discourages expression of emotion may still struggle with changing their relationship with their internal experience and may be reluctant to take a compassionate and nonjudgmental stance towards their experience. As such, clinicians can validate these concerns and also encourage veterans to explore if changing this stance would enable her to engage in values consistent action (Roemer & Orsillo, 2010). While acceptance-based approaches lend themselves to working with diverse populations, clinicians should also explicitly consider the specific cultural factors of the veteran (Fuchs, Lee, Roemer, & Orsillo, 2013).

Specifically, clinicians should account for the culture of the military system, military family, and military support system, as well as the unique context from which of veteran and her family comes. Failing to recognize the complex dynamic among the individual, the family, and military systems may mean an incomplete assessment of needs and suboptimal treatment. Moreover, clinicians should familiarize themselves with characteristics of cultural identities, particularly if and when they differ from the clinician's. Consultation on such topics is encouraged (Roemer & Orsillo, 2010). Clinicians who do not provider services in a military or veteran environment should seek additional information and training on military culture and appropriate interventions and resources. Thorough assessment appears to be particularly important for the veteran population that is often diagnostically complex with a variety of psychosocial stressors.

Mindfulness as culturally incongruent. It is important for clinicians to describe mindfulness as separate from Buddhist traditions, particularly for veterans who are uncomfortable with spiritual practices or who have a firmly established practice themselves and may perceive mindfulness as a threat to their existing beliefs. Clinicians may even discuss with veterans how contemplative practices, such as mindfulness appear in Christianity, Judaism, and Islam. Clinicians can collaborate with veterans to practice mindfulness in the context of her own spiritual tradition, which may enhance the therapeutic alliance, increase treatment engagement, and positive enhance the meditation practice (Roemer & Orsillo, 2010). An assessment of the veteran's perception of mindfulness and potential cultural barriers may be included in the initial interview, as when they are addressed early on, the clinician can empathically engage in a dialogue with the veteran in order to deliver culturally competent treatment.

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APPENDIX C

Institutional Review Board (IRB) Notice of Exemption

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

February 2, 2016

Deniz Ahmadinia

Project Title: A Clinicians Guide to Working with Female Veterans and their Children
Re: Research Study Not Subject to IRB Review

Dear Ms. Admadinia:

Thank you for submitting your application, *A Clinicians Guide to Working with Female Veterans and their Children*, to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). After thorough review of your documents you have submitted, the GPS IRB has determined that your research is **not** subject to review because as you stated in your application your dissertation *research* study is a "critical review of the literature" and does not involve interaction with human subjects. If your dissertation research study is modified and thus involves interactions with human subjects it is at that time you will be required to submit an IRB application.

Should you have additional questions, please contact the Kevin Collins Manager of Institutional Review Board (IRB) at 310-568-2305 or via email at kevin.collins@pepperdine.edu or Dr. Judy Ho, Faculty Chair of GPS IRB at gpsirb@pepperdine.edu. On behalf of the GPS IRB, I wish you continued success in this scholarly pursuit.

Sincerely,

Judy Ho, Ph. D., ABPP, CFMHE
Chair, Graduate and Professional Schools IRB

cc: Dr. Lee Kats, Vice Provost for Research and Strategic Initiatives
        Mr. Brett Leach, Compliance Attorney
        Dr. Lou Cozolino, Faculty Advisor