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LOYOLA UNIVERSITY CHICAGO

EMPIRICALLY SUPPORTED TREATMENT INTERVENTIONS FOR PERSONS
WITH POSTTRAUMATIC STRESS DISORDER (PTSD) and COMORBID
BORDERLINE PERSONALITY DISORDER (BPD)

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
PROGRAM IN SOCIAL WORK

BY

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CHICAGO, IL

DECEMBER, 2012

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TABLE OF CONTENTS

LIST OF TABLES	vi
LIST OF FIGURES	vii
CHAPTER ONE: INTRODUCTION	1
Background of the Problem	1
Statement of the Problem	4
Purpose of the Study	5
Research Question	5
Importance of the Study	6
Scope of the Study	7
Type of Study	8
Intervention	8
Population	9
Outcomes	9
Definition of Terms	10
Borderline Personality Disorder	11
Posttraumatic Stress Disorder	12
Eye Movement Desensitization and Reprocessing	13
Dialectical Behavior Therapy	14
Delimitations and Limitations	15
CHAPTER TWO: REVIEW OF THE LITERATURE	17
The Relationship Between Trauma and Borderline Personality Disorder	17
Empirical Support for Eye Movement Desensitization Reprocessing	23
Empirical Support for Dialectical Behavior Therapy	26
CHAPTER THREE: RESEARCH METHODS	30
Qualitative Paradigm	30
Qualitative Methods	31
The Researcher's Role	32
Data Sources	33
Criteria for Determination of Independent Findings	35
Data Collection	36
Data Analysis	37
Verification	39
Ethical Considerations	39
Plan for Narrative/Timetable for Completion	40
CHAPTER FOUR: RESEARCH FINDINGS	41
Results of the Literature Search	41
Excluded Studies	45
Included Studies	49
Randomized Controlled Trials	49

Single Group Pre-Post Designs	52
Case Studies	54
Statistical Procedures	62
Conceptual Literature	67
CHAPTER FIVE: CONCLUSIONS, DISCUSSION, AND SUGGESTIONS FOR FUTURE RESEARCH	73
Summary	73
Conclusions	77
Discussion	78
Suggestions for Future Research	81
APPENDIX A: SCREENING AND DATA EXTRACTION FORM	84
REFERENCE LIST	102
VITA	110

LIST OF TABLES

Table 1. Characteristics of Excluded Studies	47
Table 2. Sample Characteristics of Included Studies	59
Table 3. Treatment Characteristics of Included Studies	60
Table 4. Statistical Data for Randomized Controlled Trials	64
Table 5. Statistical Data for Single Group Pre-Post Studies	65

LIST OF FIGURES

Figure 1. Flow Chart of Literature Search

44

CHAPTER ONE

INTRODUCTION

Background of the Problem

The diagnostic label borderline personality disorder evokes strong images of “difficult” and “mentally draining” patients in the mental health care provider while carrying the added burden of such popular culture representations as Glenn Close in “Fatal Attraction.” Plagued by exasperated responses from health care providers and fearful associations in the public realm, individuals with Borderline Personality Disorder (BPD) may be considered among the most vulnerable patients in the mental health care system, especially when one considers the undeniable link between Borderline Personality Disorder and childhood victimization (Classen, Pain, Field, & Woods, 2006). In an effort to lend a sense of urgency to the challenge of treating clients with Borderline Personality Disorder, Rosenbluth (1997) observed that about eight to ten percent of borderline patients eventually complete suicide, while nearly three quarters of borderline clients attempt suicide on at least one occasion, and approximately fifteen to twenty-five percent of psychiatric inpatients and outpatients struggle with BPD. Despite the fact that BPD emerges as one of the most widely researched disorders, consistent proof of validity and reliability of the diagnostic category remains conspicuously absent (Becker, 2000). Controversies related to the borderline diagnosis, which will be explored in Chapter 2, hold particular relevance to the current investigation, as such controversies inform the

difficulties that have plagued the treatment literature pertaining to BPD and comorbid Posttraumatic Stress Disorder.

The history of the borderline diagnosis has been “problematic” (p. 87) since its inception according to Classen et al. (2006), who referred to the fact that the diagnosis, first introduced by Stern in 1938, did not appear in the *Diagnostic and Statistical Manual IV (DSM-IV)* until 1980 (American Psychological Association [APA], 2000). The term borderline represented the “border” between neurosis and psychosis at the time of its development; however, Becker (2000) recognized that the diagnostic category of Borderline Personality Disorder had evolved to the point that its diagnostic criteria have been revised to capture the primarily affective nature of its associated pathology. In a poignant statement regarding the political forces that impinge on diagnostic classification, Becker (2000) draws attention to the soaring interest in funding for research on affective disorders that peaked in the 1980s and coincided with the reshaping of the BPD diagnosis. Since the introduction of BPD into the *Diagnostic and Statistical Manual IV* (APA, 2000), research on this disorder has been far from lacking. In fact, many authors uphold the distinction of BPD as one of the most heavily researched disorders (Becker, 2000).

Classen et al. (2006) credited the proliferation of research pertaining to BPD to two historical developments in psychiatry, which include a growing interest in data collection on the incidence and deleterious effects of child abuse and the budding appreciation of attachment considerations in the etiology of mental illness. Van der Kolk, McFarlane, and Weisaeth (1996) credit Judith Herman and Sara Haley, herself a victim of incest,

with forging awareness of the widespread prevalence of childhood victimization during the 1980s, while advocating for a reexamination of the potentially devastating psychological impact of childhood abuse. The weight of such advances led the authors of the *DSM-IV* (APA, 2000) to shift the diagnostic criteria for the experience of trauma from events “outside of the range of normal human experience” to events that involve “actual or threatened death or serious injury,” thus accomplishing the complementary tasks of recognizing and demystifying the range of traumatic events experienced by women and children (Hodges, 2003, p. 411). Van der Kolk et al. (1996) poignantly recognized that research on trauma theory focused almost exclusively on the traumatic experiences, especially combat related, of white males between 1895 and 1974. Van der Kolk et al. (1996) referred to the startling fact that, in 1980, the leading U.S. textbook of psychiatry estimated the occurrence rate of childhood abuse to be fewer than one in a million women and, further, characterized the damage related to such experiences as “not particularly damaging” (p. 61). Building upon the work of Bowlby, Allen (2001) intensified the connection between early attachment experiences and the achievement of distress tolerance, thus heightening interest in adult pathology bearing the marks of an evolving understanding of developmental missteps and their legacy in interpersonal functioning.

Despite advances in etiological research marked by a deepening respect for pathological influences in the environment, research pertaining to the treatment of comorbid BPD and Posttraumatic Stress Disorder (PTSD) remains lamentably scarce. Harned and Linehan (2008), in fact, observed that no single study has specifically

evaluated the treatment of PTSD in a BPD population, which stands in notable contrast to the strength of the relationship between BPD and PTSD in etiological research. The current state of research regarding the link between BPD and trauma will be undertaken in Chapter 2 of this proposal, alongside an exploration of the treatment literature pertaining to BPD and PTSD. It is sufficient to note at this time that the present investigation seeks to address the documented gap in the treatment literature identified by Harned and Linehan (2008) and, more specifically, utilizes a systematic review of the literature to confront the confounding influence of comorbidity on treatment planning. The nature of the treatment related challenges presented by a comorbid diagnosis of BPD and PTSD will be specified next.

Statement of the Problem

Despite lingering discrepancies in the literature related to the nature and extent of the relationship between trauma and BPD, ample evidence exists to support the conclusion that individuals with Borderline Personality Disorder are among the most deeply wounded of our clients. It is therefore not surprising that the potential for regression, and, in some cases, significant harm that accompanies the endeavor of trauma-focused work with severely compromised individuals has led some clinicians to forgo such interventions with severely comorbid patients. The abandonment of trauma-focused work with severely Borderline patients, on the basis of fatalistic assumptions, threatens the optimal recovery of this population and contradicts ample, theoretical evidence in support of the efficacy of trauma-focused interventions with Borderline clients (Van der Kolk et al., 1996; Basham & Miehl, 2004; Bateman & Fonagy, 2004). A systematic

review of the literature is warranted to arm practitioners with concrete evidence in the struggle to minimize the risk of destabilization while maximizing the uncompromised recovery of clients. An elaboration of the central aim of this investigation follows.

Purpose of the Study

The purpose of this study is to clarify the optimal treatment choice for patients with comorbid BPD and PTSD, especially when one considers the degree of vulnerability attached to the diagnosis of BPD and the revictimization potential of matching treatment interventions with a tenuously founded diagnosis. Trauma-focused therapies, particularly EMDR, tend to be the treatment of choice for PTSD; however, comorbid borderline pathology has been identified in the literature as a predictor of poorer treatment outcomes for Eye Movement Desensitization Reprocessing, thus lending support for the selection of an intervention tailored to the unique needs of borderline patients, such as Dialectical Behavior Therapy (DBT). A review of the literature in support of the selection of EMDR and DBT for comparative analysis will be provided in a subsequent section.

Research Questions

The specific research questions to be addressed by this study may be summarized as follows:

- 1) Is treatment using EMDR with both men and women diagnosed with PTSD and comorbid BPD effective?
- 2) Is treatment using DBT with both men and women diagnosed with PTSD and comorbid BPD effective?

3) If both men and women diagnosed with PTSD and comorbid BPD are given EMDR or DBT, which will result in more optimal treatment outcomes? This review question was modeled after the Client-Oriented, Practical, Evidence-Search (COPES) question format proposed by Gibbs (2003) and, more specifically, fulfills criteria for an effectiveness question in its explicit focus on direct comparison of competing interventions. The decision to pursue the method of systematic review reflects the social work value of promoting ethical practice by appealing to scientific inquiry, as well as the value of strengthening professional accountability and diligence (Gibbs, 2003; Littell, Corcoran, & Pillai, 2008). In the case of the current study, a systematic review also accomplishes the critical task of assessing the current state of evidence-based practice guidelines with regard to the use of EMDR and DBT with clients diagnosed with comorbid BPD and PTSD. To the knowledge of this researcher, no systematic review has examined optimal treatment interventions for persons with comorbid BPD and PTSD.

Importance of the Study

The importance of this study may be most potently viewed in terms of the overall, therapeutic benefits of trauma resolution and, conversely, the psychological toll of residual trauma. Beyond presenting treatment-related challenges, unresolved trauma may in fact contribute to behavioral patterns that support and sustain borderline pathology. Perhaps the most debilitating component of unintegrated, traumatic memories lies in the realm of behavior and, more specifically, relates to the “compulsion to repeat” (p. 195) the past, as noted by Freud, who is credited by Van der Kolk et al. (1996) with bringing behavioral repetitions under the scope of treatment interventions. Stein and Allen (2007)

identified the tendency of traumatized individuals to reenact the past as a primary factor in maintaining a vicious cycle of disrupted attachments that inhibit recovery and foster chronicity. Fonagy and Bateman (2004) referred to the concept of controlling internal working models to describe this phenomenon and explained that traumatized individuals tend to enact past scripts of power and domination in relation to others, thus compromising the thrust toward healthy attachment in the present. Similarly, Basham and Miehl (2004) contended that unresolved trauma impinges upon the individual to organize future interactions around victim, victimizer, and bystander templates, thus restricting the flexibility of self, self-object representations. The degree of importance assigned to this study may be viewed as analogous to the cost of underestimating the influence of trauma in the enterprise of therapy with some of its most chronic sufferers. The social justice implications presented by challenges to the validity of the Borderline diagnosis and the poor prognostication and fatalistic assumptions engendered by the BPD label embolden the importance of this study.

Scope of the Study

The research questions guiding the current study form the boundaries for the determination of relevant data. In adherence to formal standards for systematic review protocol, the present investigation will utilize exclusion/inclusion criteria outlined by Petticrew (2006), who identified the type of study, intervention, population, and outcomes as targets for inclusion and exclusion criteria.

Type of Study

Petticrew (2006) highlighted the importance of matching investigative aims with study type and emphasized the need to privilege randomized controlled trials (RCT) in the investigation of effectiveness questions, as the design of RCTs more readily permits causal attribution between specific interventions and outcomes. It must be noted, however, that the epistemological stance guiding this study aligns with the heuristic paradigm forwarded by Tyson (1995), which recognizes the limitations of the human enterprise of research with regard to identifying absolute causality while upholding the capacity for empirical research to achieve ever greater approximations of the truth. This researcher will prioritize inclusion of RCTs, meta-analyses, and systematic reviews in an effort to evaluate the fundamental efficacy of EMDR and DBT. Studies with quasi-experimental and single group pre-post designs, despite limited rigor, will not be excluded from the literature search, especially in light of documented gaps in the literature pertaining to the treatment of persons with comorbid PTSD and BPD (Harned & Linehan, 2008). Despite the prioritization of RCTs demanded by the research question, this author assigns particular importance to the potential contributions of qualitative research, given the ethical barriers that limit the inclusion of severely Borderline patients in randomized controlled trials. The specific role of qualitative research will be addressed under a subsequent heading.

Intervention

The interventions targeted by the current investigation are EMDR and DBT; therefore, the literature search will be restricted to studies pertaining directly to the employment of

EMDR and DBT with persons diagnosed with comorbid PTSD and Borderline Personality Disorder. Studies that involve a direct comparison between EMDR and DBT, as well as studies that relate to the utilization of EMDR or DBT, either with a control/comparison group or without, will be eligible for inclusion.

Population

The diagnostic controversies and complexities that obscure the boundary between the categories of PTSD and BPD present important barriers to the identification of discrete inclusion/exclusion criteria. Studies that pertain directly to the treatment of individuals with PTSD and comorbid BPD will be prioritized in the literature search as the primary diagnostic target for investigation. Preliminary investigation demonstrates the value of including studies that target individuals with “Complex PTSD”, as such a classification often includes individuals with comorbid Borderline pathology and reflects the diagnostic theorizing of Classen et al. (2006) and Becker (2000). Studies yielded under this heading will be read thoroughly to verify the presence of Borderline pathology among participants. Additionally, the documented association between childhood trauma and Borderline Personality Disorder often results in the issuing of a BPD diagnosis as a blanket construct that subsumes trauma related pathology. Therefore, studies that pertain to the treatment of Borderline Personality Disorder alone will be included and read thoroughly to verify the presence of trauma histories among participants.

Outcomes

Petticrew (2006) identified the need to distinguish between primary and secondary outcomes in order to sustain the focus and integrity of the investigation. The current

investigation will uphold the widely accepted notion that treatment outcomes for psychiatric interventions be measured in terms of their ability to promote and sustain “recovery,” rather than their capacity to “cure.” The primary outcome targeted by the current investigation relates to the reduction of PTSD and BPD related symptomology to an extent that produces significant improvements in the social and professional functioning of the individual. Global reductions in acuity of symptoms may be measured objectively by both behaviorally driven data and data pertaining to level of care, such as frequency of self-harm behaviors and hospitalizations. Objective measures of symptom reduction will be privileged over the self-reporting of study participants, due to the potential for bias introduced by subjective-self-reporting. Secondary outcomes may include compartmentalized measurements, such as a reduction in distress related to recall of traumatic memories, as may be measured by the Subjective Units of Distress Scale, or a specific reduction in trauma-related depression, as may be measured by the Beck Depression Inventory. Standardized mean differences may be compared between control and treatment groups to determine the effectiveness of the interventions under investigation.

Definition(s) of Terms

In order to proceed with the proposed investigation, the concepts relevant to the discussion must be defined. In the case of patients diagnosed with comorbid BPD and PTSD, the relevance of such definitions has been assigned particular importance. As exhaustive definitions and full elaboration of treatment protocols are beyond the scope of the paper, the following concepts will be briefly defined: Borderline Personality

Disorder (BPD); Post-Traumatic Stress Disorder (PTSD); Eye Movement Desensitizing and Reprocessing Therapy (EMDR); and Dialectical-Behavior Therapy (DBT).

Borderline Personality Disorder

The political and historical implications of the BPD diagnosis will be addressed in more depth in subsequent sections. At this point, it will be sufficient to recognize that BPD has been distinguished from other disorders by being the only diagnosis for which treatment resistance and strong countertransference reactions of the therapist serve as proofs of validity (Becker, 2000). The pessimism engendered by this diagnosis among helping professionals aside, the *DSM-IV* (APA, 2000) provides the following list of formal symptoms, five of which must be present to constitute a diagnosis of BPD: frantic efforts to avoid real or imagined abandonment; a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation; identity disturbance, defined as markedly and persistently unstable self-image or sense of self; impulsivity in at least two areas that are potentially self-damaging, such as sex and substance abuse; recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior; affective instability due to a marked reactivity of mood; chronic feelings of emptiness; inappropriate intense anger or difficulty controlling anger; and transient stress-related paranoid ideation or severe dissociative symptoms. A recent draft of the *DSM-V* retains the diagnostic category of BPD under the sub-heading Borderline Type, within the category of Personality Disorders, and proposes the following recommended additions to the symptoms listed in the current edition: unstable self-image expounded upon to refer explicitly to self-loathing tendencies; impairments in

empathy toward others introduced; and reference to cognitive impairments in the form of proneness to concrete, black and white thinking (<http://www.dsm5.org>).

Post-traumatic Stress Disorder

Diagnostic criteria for PTSD recently shifted to include the victimization experiences of women, as the *DSM-III* diagnosis of PTSD specified the need for precipitating events to be “outside the range of normal human experience” (Hodges, 2003, p. 411). The *DSM-IV* (APA, 2000) has revised the definition of traumatic event to include the following characteristics: actual or threatened death or serious injury, or a threat to the physical integrity of self and others; and the person’s response involved intense fear, helplessness, or horror. In association with the traumatic event, the *DSM-IV* (APA, 2000) places PTSD symptoms within the categories of reexperiencing the event, tendencies of avoidance, and symptoms of increased arousal. Reexperiencing of the event may involve the following symptoms: recurrent and intrusive distressing recollections of the event; recurrent distressing dreams of the event; acting or feeling as if the traumatic event were recurring; intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event; and physiological reactivity. Persistent avoidance of stimuli associated with the traumatic event may include avoidance thoughts, feelings, or activities associated with the trauma, coupled with a diminished interest in previously enjoyed activities and connection to others. Symptoms of arousal are listed in the *DSM-IV* (APA, 2000) in the following manner: difficulty falling or staying asleep; irritability or outbursts of anger; difficulty concentrating; hypervigilance; and an exaggerated startle response. The pursuit of a formal distinction

between simple and complex trauma has been championed by many authors, most notably Judith Herman (Herman, 1992). The distinction between simple and complex PTSD resonates with the theorizing of Lenore Terr (1991), who outlined a typology of trauma that distinguishes between single episodes of trauma, Type I trauma, and prolonged or repeated exposure to the trauma, Type II trauma, the latter being associated with more significant and enduring personality changes in adulthood.

Eye-Movement Desensitization and Reprocessing Therapy

Francine Shapiro developed EMDR to provide a structured approach guided by an information-processing model to treat PTSD related symptoms (Shapiro, 2002). EMDR is based upon the Adaptive Information Processing Model (AIP), the following summary for which is taken from Shapiro (2002). The basic premise of the AIP model posits that if traumatic memories are not fully processed, in the manner typical of most new information, the initial perceptions will be stored with any distorted thoughts or perceptions experienced at the time of the traumatic event. Shapiro (2002) further hypothesized that the eye movements and other dual-attention stimuli facilitate the full processing of the memory. The treatment consists of eight phases, which will be briefly summarized.

The first phase consists of assessment and the development of a treatment plan. Phase two is aimed at preparation for trauma related work and involves such strategies as the “safe place” technique, in which clients learn to utilize visualization as a self-soothing method. Processing of the traumatic event begins in Phase 3, which focuses on the identification of associated sensory, cognitive, and affective associations, with particular

emphasis on the discovery of irrational negative beliefs associated with the trauma. The fourth phase begins with instructions to focus on the visual image, negative belief, and bodily sensations and then to simultaneously initiate eye movements from side to side for 15 or more seconds. Phase 5 centers on the consolidation of cognitive insights, while phase 6 is aimed at assessing any shifts in the level of distress experienced by the patient in relation to the traumatic memory. Phase 7 involves a formal evaluation by the therapist of the degree of memory processing achieved by the intervention and Phase 8 focuses on the identification of any issues/needs that have not been fully met with the treatment.

Dialectical-Behavior Therapy

Dialectical-Behavior Therapy was developed in 1993 by Marsha Linehan to address the specific treatment challenges presented by patients with Borderline Personality Disorder. The overarching goals of DBT are identified as follows by Harned and Linehan (2008): reduce immediate life-threatening behaviors; reduce therapy-interfering behaviors; and reduce quality-of-life interfering behaviors. Harned and Linehan (2008) proposed a structure for DBT that includes weekly individual psychotherapy, weekly group skills training, and phone consultation on an as needed basis. The foundational concept of DBT may be viewed as the synthesis of antithetically opposed perspectives, which resists privileging of one viewpoint over another and promotes balanced unity. An example of a dialectic is the common tension between acceptance of one's emotions as valid and the drive to change them (Harned, Najavits, & Weiss, 2006). Mindfulness, which refers to a state of non-judgmental and suspended awareness of moment to moment experience, lies at the core of DBT-based interventions. DBT focuses on the

delivery of the following four skills modules: mindfulness; interpersonal effectiveness; emotion regulation; and distress tolerance. Each module maintains a focus on achieving the broad aims outlined above with the ultimate goal of alleviating the chaos that often plagues the lives of individuals with BPD.

Delimitations and Limitations

With regard to the systematic review methodology, the quality of the review depends upon the quality of the studies selected for inclusion. Littell et al. (2008) emphasized the importance of assessing for the following sources of bias that may be present in studies that meet eligibility for inclusion in meta-analysis: selection bias; performance bias, or differences in care provided to groups beyond the target interventions; attrition bias; and detection bias, or differences in outcome bias. Rigorous coding methods will therefore be implemented to identify any potential sources of bias and eligibility decisions will be adjusted accordingly. An additional source of bias introduced by the coding process relates to the subjectivity inherent in the screening process. Final coding decisions will be subject to triangulation, as 20% of this researcher's screening decisions will be reviewed by a fellow graduate student. With regard to publication bias, this researcher will contact experts in the field in an effort to locate unpublished manuscripts pertaining to the topic under investigation, as previously stated. Littell et al. (2008) also upheld the use of funnel plots to assess for publication bias. It is also important to note that similar to any other diagnostic categories, BPD and PTSD are subject to the limitations carried by any socially constructed label, given that such designations are inherently imperfect in their ability to capture the intricate realities of human experience (Kleinman, 1991).

Finally, the theoretical assumptions that have guided the conception of this proposal introduce researcher bias that may limit the validity of interpretations.

CHAPTER TWO

REVIEW OF THE LITERATURE

The present investigation was strengthened by a review of the literature in the following domains: the nature of the relationship between trauma and BPD; evidence for the efficacy of EMDR as a primary treatment for PTSD; and evidence in support of the utilization of DBT in the treatment of Borderline Personality Disorder. An examination of the relationship between PTSD and BPD will be presented and followed by a literature-based justification for the selection of EMDR and DBT as targets for comparative analysis. The controversies forged by lingering discrepancies related to the directionality and significance of the relationship between trauma and BPD highlight the inexact nature of socially constructed labels and will be presented next.

The Relationship Between Trauma and Borderline Personality Disorder

The causal link between childhood abuse and BPD retains a degree of prominence and acceptance that has led some researchers to propose a reclassification of BPD as a form of PTSD; however, the risk of oversimplification presented by a potentially specious attribution of causality continues to dampen the campaign for diagnostic reformulation. In an effort to reinvigorate the cause of diagnostic integration, Classen et al. (2006) stated that, among the personality disorders, BPD has been most frequently targeted by researchers in terms of the prevalence of early adverse events, adding that the role of early attachment experiences in the development of BPD warrants heightened

recognition. Clarke, Resick, and Rizvi (2008) compellingly referred to a study of 379 participants with BPD conducted by Zanarini, Frankenberg, and Dubo (1998), which found that 61% of females and 35% of males also met criteria for comorbid PTSD. Assigning absolute causality to childhood trauma in the development of adult BPD violates the limits of the fallibly human activity of research and imposes an oversimplified explanation for a complex social and cultural phenomenon. Researchers have debated about the causal direction of the relationship between BPD and PTSD by contending that borderline personality constellations or predisposing temperaments, which may be present in childhood, may increase the vulnerability of such individuals to victimization. The biosocial theory proposed by Harned and Linehan (2008) has popularized the notion that a combination of genetic, predisposing factors and environmental events likely contribute to the development of borderline pathology, thus locating blame outside of willful, voluntary action on the part of the victim and within the complex interplay between biology and nurture.

Despite the lack of consensus concerning the exact nature of the relationship between BPD and PTSD, statistics concerning the comorbidity of these disorders demonstrates clearly that a strong connection exists. Feeny, Zoellner, and Foa (2002) asserted that, among individuals with PTSD, rates of concurrent personality disorders have reached up to 50% in some studies, with BPD emerging as the most common comorbid condition with PTSD. Classen et al. (2006) described the rates of comorbidity among Borderline Personality Disorder (BPD) and Post-Traumatic Stress Disorder (PTSD) as very high and referred to study results that estimated the rate of concurrence as high as 56 to 68%.

Feeny et al. (2002) referred to the results of a study conducted by Zanarini et al. (1998), which revealed that, among patients diagnosed with Axis II disorders, PTSD is more common among those with BPD than those with other personality disorders. Van der Kolk et al. (1996) intensified the connection between BPD and PTSD by referring to results of a study he conducted in 1987, which revealed that more than half of all inpatient, BPD patients had histories of severe physical or sexual abuse prior to the age of 6 and, among the 13% of patients who did not report a history of sexual abuse, more than half were found to have been amnesic for most of their childhoods. Everett and Gallop (2001) strengthened the relationship between severity and chronicity of abuse among BPD patients by referring to a study conducted by Paris (1994), which revealed that borderline patients were more likely to have been abused by multiple perpetrators and to have experienced abuse involving penetration. Given the high rate of comorbidity among BPD and PTSD, it is not surprising that controversies have emerged related to the ethical and practical advantages of merging the two diagnostic categories, particularly in light of the stigma associated with BPD. The most formidable obstacle to the absorption of the Borderline diagnosis by the category of PTSD lies in the challenge of demonstrating a superior link between BPD and trauma, particularly in relation to the myriad of personality disorders that share an etiological claim to early, adverse, predisposing events. The state of empirical research pertaining to this important question will be presented next.

Lobbestael and Bernstein (2010) challenged the singularity of BPD in relation to childhood trauma and reported knowledge of only two previous studies that have

simultaneously examined the relationship between differentiated categories of trauma and abuse and the full spectrum of personality disorders. Bernstein, Stein, and Handelsman (1998) offered the conclusion that emotional abuse correlates strongly with personality disorders in all three clusters, while Bierer, Yehuda, Schmeidler, Mitropoulou, and Silverman (2003) found that paranoid personality disorder was associated with physical, sexual, and emotional abuse, whereas BPD was associated solely with emotional abuse. Lobbestael and Bernstein (2010) sought to build upon these findings by examining the relationship between five forms of childhood abuse (emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse) and ten personality disorders utilizing a sample of 409 patients from multi-level care settings. Similar to the findings reported by Bernstein et al. (1998) and Bierer et al. (2003), Lobbestael and Bernstein (2010) supported the distinction of antisocial personality disorder as being the most strongly correlated with physical abuse and neglect and, most importantly, found BPD to be the only personality disorder related to sexual abuse, emotional abuse, and emotional neglect. It is not surprising that an association with contributory, childhood events extends beyond the parameters of the borderline diagnosis, and the fact that such an association is shared by other personality disorders merely strengthens the importance of the current investigation, which navigates the complex terrain of integrating past and present in the treatment of severely comorbid patients. One should be cautious about relying too heavily upon the contributions of a single cause in the development of complex personality structures and the risks presented by such a singular focus will be addressed subsequently.

While recognizing the inadequacies and controversies surrounding the BPD diagnosis, Becker (2000) warned of the error of oversimplification that may occur, should childhood abuse be identified as the root of all difficulties experienced by individuals diagnosed with Borderline Personality Disorder. The endeavor to shift the core of BPD to the trauma spectrum poses the threat of further stigmatizing and marginalizing women who may be diagnosed with BPD and who do not have a history of abuse, thus heightening a sense of guilt and shame in such patients. Becker (2000) referred to the damaging contrast between the BPD and PTSD diagnosis by characterizing BPD and PTSD as “bad girl” and “good girl” representations, given the almost full pardoning granted to the patient by the mere existence of a traumatic past. By seeking too fervently to locate blame for Borderline personality features within the locus of childhood maltreatment, one not only runs the risk of validating the contrast noted by Becker (2000), one also narrows the criteria for absolution, so to speak, by neglecting the complex interplay between biology and the environment reinforced by Harned and Linehan (2008). Classen et al. (2006) avoided the error of eliminating the borderline diagnosis on the basis of imperfect etiological assumptions by proposing the establishment of two additional PTSD classifications alongside BPD. Classen et al. (2006) relied on evidence linking the prominence of attachment considerations in the development of pathology in proposing the establishment of Posttraumatic Personality Disorder (PTPD)-Disorganized Type and Posttraumatic Stress Disorder-Organized Type. According to this classification, persons who have a history of chronic traumatization, who may be differentiated as having either disorganized or organized attachment styles, would be diagnosed according to the

personality altering nature of their trauma histories and the BPD diagnosis would be preserved to designate individuals who have trauma histories, to a lesser extent than individuals with PTPD, and disorganized attachment.

The proposed classification schema of Classen et al. (2006) would legitimize the experiences of individuals who suffer the effects of early, sustained traumatization. Judith Herman (1992) observed that the diagnostic criteria for classic PTSD derive, almost exclusively, from the experiences of otherwise well adapted individuals who experience discrete traumatic events, thus arguing for the need to develop the category of Complex PTSD, in addition to simple PTSD. According to Briere and Spinazzola (2005), the central features of complex posttraumatic stress, can be described as identity struggles, boundary awareness, affective dysregulation, and difficulties with interpersonal relationships, all of which cohere with the core features of BPD. One might therefore contend that the relationship between the symptoms of classic PTSD and the diagnosis of BPD appears to be additive, as BPD lends form to the experiences of chronic and repeated trauma victims in the absence of a formal diagnostic category of complex PTSD. In order to justify a comorbid diagnosis of PTSD, as it is defined in the *DSM IV* (APA, 2000) Rusch, Corrigan, Bohus, Kuhler, Jacob, and Lieb (2007) observed that therapists' must rely upon a distinction between the explicit and implicit meanings attached to behaviors and assess, for example, the potential role of traumatic memories in maintaining generalized patterns of avoidance, both experiential and interpersonal. Furthermore, a diagnosis of BPD is a risk factor for repeated victimization throughout the lifespan and associated with greater severity of posttraumatic stress, thus increasing the

likelihood of borderline individuals to report classic symptoms of PTSD, such as re-experiencing and hyperarousal, with increased frequency and for longer duration (Lauterbach & Vrana, 2001). Controversies regarding the ethical and political implications of preserving the BPD diagnosis will likely persist, as will micro level differences in the diagnostic practices of clinicians, who may express their opposition by avoiding the BPD label, in favor of a PTSD classification. The complexities that pervade the diagnosis of PTSD are reflected in the literature pertaining to its treatment, a review of which will be presented subsequently.

Empirical Support for Eye Movement Desensitization Reprocessing

EMDR and trauma-focused cognitive behavior therapy have emerged in the literature as treatments of choice for PTSD when compared to alternative trauma-focused interventions, such as stress inoculation therapy, Prolonged Exposure, and Present Centered Therapy (Salvatore, 2009; Seidler, & Wagner, 2006; Hamblen, Schnurr, Rosenberg, & Eftekhari, 2009.) Ironson, Freund, Strauss, and Williams (2002) upheld the superiority of EMDR in comparison to Prolonged Exposure, particularly with regard to tolerability and speed of recovery, as measured by the SUDS scale, and referred to numerous studies that support this finding. Hamblen et al. (2009) referred to a slight preference for trauma-focused cognitive behavior therapy over EMDR but cite the publication of fewer studies related to the more recently developed EMDR treatment protocol as the determining factor, which is a conclusion supported by Ponniah and Hollon (2009). Seidler and Wagner (2006) concluded that EMDR and trauma-focused cognitive behavior therapy are equally efficacious, based upon a systematic review of the

literature that identified seven randomized controlled trials for inclusion in meta-analysis. Cook, Coyne, and Biyanova (2009) referred to EMDR as the fastest growing treatment for PTSD and referred to the fact that no other therapeutic intervention has enjoyed a similar rate of dissemination, to the extent that it has been accorded the distinction of the fastest growing treatment in the history of psychotherapy (McNally, 1999). Based upon qualitative data obtained from in-depth interviews with EMDR practitioners, Cook et al. (2009) identified the following characteristics of EMDR that contributed to its integration within the culture of participating agencies: observability of treatment effects; experiencing its effects during a role training session; and compatibility of EMDR tenants with values of practitioner.

Since Shapiro (1989) proclaimed the efficacy of EMDR as a treatment for PTSD, while emphasizing the rapidity of its effects, EMDR has continued to attract the attention of practitioners and academicians alike. The nature and validity of the contributions offered by the bilateral stimulation that constitutes the operative mechanism of EMDR remains a subject of debate. The dual attention stimuli in the form of bilateral eye movements developed by Shapiro (2002) cohere with recent neurobiological advances related to the nondeclarative storage of memories and have prompted Basham and Miehl (2004) to recognize EMDR as an exceptional technique, in terms of its integration of cognitive-behavioral elements and neurophysiologically informed memory processing interventions. However, Hamblen et al. (2009) referred to growing evidence that the bilateral stimulation mechanism constitutes an “unnecessary component” (p. 351). In addition to the skepticism engendered by the dual stimulation mechanism that underlies

EMDR, the appraisal of EMDR is subject to the scrutiny extended to any treatment paired with a highly inclusive diagnostic category, the details of which will be described next.

Similar to the challenges posed by the matching of trauma and BPD, the matching of PTSD with a single intervention of choice defies the variability, in nature and degree, of the range of traumatic experiences that produce posttraumatic stress. Ponniah and Hollon (2009) observed that no single trauma-focused intervention has been tested with the full spectrum of trauma types. EMDR has demonstrated efficacy in the treatment of complex grief (Sprang, 2001), and Salvatore (2009) referred to two studies that uphold the efficacy of EMDR with sexual abuse survivors (Edmond, Rubin, & Wambach, 1999; Rothbaum, 1997), which strengthens the pertinence of EMDR to the current investigation. Benish, Imel, and Wampold (2008) challenged the superiority of “trauma-focused” interventions and offered evidence that non-trauma focused interventions are equally efficacious in the treatment PTSD, based upon a meta-analysis of clinical trials. Ehlers, Bisson, Clark, Creamer, Pilling, Richards, Schnurr, Turner, and Yule (2010) challenged the validity of this claim and referred to seven other meta-analyses or systematic reviews that have shown a preference for trauma-focused interventions, as opposed to interventions that fail to address the pernicious influence of traumatic memories. Nonetheless, one should not dismiss the potential influence of common factors across therapeutic interventions that warrant consideration as a potential source of attribution for client outcomes. Studies pertaining to the treatment of PTSD vary in their statistical management of dropouts, thus heightening the risk of selection bias within a body of literature that often receives

attention for high levels of attrition (Matthieu & Ivanoff, 2006). Matthieu and Ivanoff (2006) emphasized the importance of determining the reasons for dropout in studies pertaining to the treatment of PTSD, as such data may hold the key to assessing the tolerability of trauma-focused interventions, which emerges as a critical consideration in the treatment of high acuity clients. In addition to mounting empirical evidence in support of the distinction of EMDR among trauma focused interventions, EMDR has been selected for its emphasis on building self-soothing capacities during the Resource Development and Installation Phase, thus enhancing the palatability of this intervention with higher acuity patients (Greenwald, 2007). Few treatment modalities are considered as supportive as DBT, the evidence for which will be presented next.

Empirical Support for Dialectical Behavior Therapy

Shortly after having introduced DBT, Marsha Linehan published the results of an initial study that found DBT to be related to fewer inpatient admissions and less severe and frequent parasuicidal behaviors among a sample of 22 Borderline patients randomly assigned to two conditions, DBT or treatment as usual (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991). Since the time of its inception, numerous studies have been launched to examine its efficacy. A review published by Lynch, Trost, Salsman, & Linehan (2007) presented sizeable evidence for the efficacy of DBT as a comprehensive and uniquely supportive intervention for the treatment of BPD and awarded DBT the recognition of being the only treatment for BPD that is well supported and specific to Borderline pathology. Kliem and Kruger (2010) referred to two other reviews that support the efficacy of DBT: Lieb, Zanarini, Schmahl, Linehan, and Bohus (2004); and

Oldham (2006). The results of a systematic review of psychological treatments for BPD published by Binks, Fenton, McCarthy, Adams, and Duggan (2009) found only modest support for the superiority of DBT over treatment as usual across seven studies identified for inclusion; however, Binks et al. (2009) revealed a significant reduction in frequency of hospital admissions and self-harm behaviors associated with DBT. Kliem and Kruger (2010) conducted a meta-analysis of 26 studies examining the efficacy of DBT, among which 15 studies reported effect sizes for self-injurious behavior. Williams, Hartstone, and Denson (2010) reinforced the documented capacity of DBT to produce reductions in inpatient admissions and self-injurious behaviors and added that DBT has been associated with higher therapy completion rates when compared to treatment as usual in numerous randomized controlled trials. Using the Personality Assessment Inventory-Borderline Features Scale (PAI-BOR), Stepp, Epler, Jahng, and Trull (2008) demonstrated that DBT was successful in reducing Borderline symptoms, particularly in the realms of affective instability; identity problems; and negative relationships in a sample of 27 patients enrolled in an outpatient DBT-based treatment program. Unlike EMDR, the prima facie validity of the therapeutic mechanisms that underlie DBT has not endured the challenges of widespread skepticism; however, the feasibility and adaptability of DBT have stirred debate, the details of which will now be provided.

Perhaps the greatest challenge to the widespread adoption of DBT in the treatment of BPD lies in the feasibility of implementation. DBT is a multi-modal, comprehensive treatment comprised of four broad modes of therapy, which may be summarized as follows: dyadic, primary relationship between client and therapist, who oversees all

components of treatment and provides on-call crisis support; skills training aimed at developing mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness skills; skills generalization aimed at enabling clients to employ skills to meet real-life challenges; and DBT consultation team support for therapists (Lynch et al., 2007). The scope of the DBT treatment protocol, particularly with regard to staff training and availability, attach heavy demands to adherence, thus leading some authors to question the practicality of DBT within the mental health service industry (Hawton et al., 2009). It is not surprising that such obstacles have led to the parceling of DBT interventions within various mental health treatment settings and some studies have begun to examine the efficacy of isolated components of DBT. Williams et al. (2010) conducted a pilot evaluation study of the effectiveness of a 20 week DBT skills training group with a sample of 140 adults diagnosed with BPD and found that the skill building component of DBT, when rendered in isolation, resulted in significant reductions in depression, anxiety, BPD symptomology, and ER presentations. Lynch et al (2007) reinforced the need for further research to illuminate the relative efficacy of separate components of DBT, so that the most potent mechanisms may be identified and privileged within a modification agenda. It should also be noted that both Hawton et al. (2009) and Lynch et al. (2007) referred to a paucity of randomized controlled trials for DBT that include males or minority clients. Despite these limitations, DBT has evolved from an intervention tailored to the specific needs of Borderline patients to a treatment of choice for multi-diagnostic, refractory patients (Lynch et al, 2007). The broadly targeted and practical nature of its tenants, rootedness in the present, and suitability to complex

pathology support the inclusion of DBT as a primary target for comparison in the present investigation

CHAPTER THREE
RESEARCH METHODS
The Qualitative Paradigm

Consistent with the formulations of Petticrew (2006) regarding the potential contributions of qualitative data to the systematic review process, this researcher will assess qualitative data yielded by the literature search, which may include case studies and conceptual literature, for relevance to the critical pursuit of exploring *how* certain interventions should be delivered in order to minimize the risk of harm to clients. Case study designs will not be included in statistical procedures, rather, such studies will hold the potential of clarifying and expanding upon insights derived from quantitative summary (Littell et al., 2008). As stated earlier, ethical barriers limit the inclusion of severely borderline patients in experimentally designed research, thus assigning heightened relevance to qualitative data in supporting the fundamental aim of the current investigation, which consists of reducing harm to high acuity patients. The caution of Basham and Miehl (2004), who illustrated the need for clients to demonstrate object constancy, or the ability to be soothed by internalized self-objects, as a prerequisite for trauma focused work holds particular relevance to the present discussion and serves as a pivotal example of the illustrative power of qualitative data. Future studies may build upon the current investigation by seeking qualitative data from clients with complex

trauma who have participated in either EMDR or DBT to determine what factors may or may not contribute to the tolerability and overall efficacy of these interventions.

Qualitative Methods

Preliminary investigation reveals that the search strategy proposed by this researcher, which will be detailed in a subsequent section, enables the discovery of both quantitative and qualitative data, thus precluding the need for a two-pronged approach. Case studies will be formally screened in the same manner as quantitative studies using a coding instrument (Appendix A), which will be described in more depth in a subsequent section; however, consistent with the recommendations offered by Littell et al. (2008) and in light of limitations associated with current meta-analytic procedures, studies with a case study design will be excluded from statistical synthesis. In terms of assessing case studies for the explanatory power described previously, researcher will allow quantitative data to inform the potential contributions of qualitative data, thus presenting the possibility that no such contribution may be relevant to the present investigation. Should this investigation yield relevant qualitative data, this researcher will bear in mind the importance of assessing qualitative studies for three specific types of validity identified by Johnson (1994). Descriptive validity relates to the accuracy with which the investigator reports the facts, such as events, objects, behaviors, etc. Interpretive validity refers to how well the researcher portrays the inner worlds of the participants, the accuracy of which may be enhanced by the solicitation of participant feedback or member checking. Finally, theoretical validity pertains to the defensibility of the researcher's theorizations related to the relationship between study variables and may be strengthened by the introduction of triangulation, both in the realm of theory and

methods. Based upon the above formulations, this researcher will seek qualitative research with high levels of transparency that utilizes triangulation, either by using multiple observational techniques and/or multiple investigators or by accounting for the influence of confounding variables and rival theories, and hence will offer the greatest potential for applicability to larger populations. This author will utilize the guidelines offered by Johnson (1994) as a lens through which the potential contributions of qualitative data may be filtered, rather than as a means of determining eligibility or assigning a formal ranking.

The Researcher's Role

The systematic review methodology seeks to minimize multiple layers of bias by demanding strict adherence to a predetermined set of literature search strategies and study coding and analysis procedures in order to promote transparency and enhance the integrity of summated data conclusions (Littell et al., 2008). The role of the researcher relates most centrally to fulfilling the mandate of transparency and assuming a critically reflective stance with regard to the potential influence of self-generated bias. The most fundamental source of researcher bias relates to the conception of the research question itself, which derives, in part, from the theoretical perspective of the researcher. This researcher upholds the tenants of fallibilistic realism summarized by Anastas (1999), which recognized the influence of theoretical bias from the point of inception to the drafting of conclusions in the investigative process. This researcher accepts the assertion that it is implausible to assume a Durkheimian “view from nowhere”, thus precluding an outright elimination of researcher bias (Baert, 2005, p. 35). However, writer will

maintain a self-reflective stance throughout the research process and rely upon investigator triangulation to make study eligibility decisions. In instances where theoretical assumptions are most visible and operative, such as the notion that unresolved trauma bolsters chronicity, this researcher has attempted to provide literature based justifications to support apriori conclusions.

Data Sources

The proposed search strategy for the present investigation will involve consultation with databases drawn from a list of recommended sources identified by Gibbs (2003) in order to promote ample diversification. The search strategy targeted databases with primary relevance to social work practice, such as Social Service Abstracts and Social Work Abstracts, as well as databases that offer a focus on general medicine and psychiatry, such as Medline and Web of Science. The selected databases are as follows:

Web of Science (<http://www.isinet.com/products/citations/ssci/>)

PsychInfo (<http://www.csaweb114v.csa.com>)

PubMed (<http://www.ncbi.nlm.nih.govquery.fcgi>)

Cochrane Collaboration (<http://www.cochrane.org>)

UICCAT-Online Book Search UIC database

(<http://www.researchguides.uic.edu/healthsciences>)

ClinPSYC (<http://www.psycinfo.com/clinpsyc.html>)

International Bibliography of the Social Sciences

(<http://www.lsc.ac.uk/collections/IBSS/>)

Medline (<http://www.ovidsp.tx.ovid.com>)

Sociofile (now Sociological Abstracts)

Sociological Abstracts (<http://www.csa.com/csa/factsheets/socioabs.shtml>)

Social Services Abstracts (<http://www.csa.com/csa/factsheets/socserv.shtml>)

Social Work

Abstracts(<http://www.naswpress.org/publications/journals/abstracts/swabintro.html>)

Social Sciences Citation Index (now Web of Science)

The following key word combinations will be utilized:

“EMDR treatment” and “PTSD”

“PTSD and “comorbid personality disorder”

“PTSD” and “Borderline Personality Disorder”

“PTSD” and “Borderline”

“EMDR” and “DBT” and “Borderline Personality”

“EMDR” and “DBT”

“PTSD” and “Borderline” and “treatment”

“EMDR” and “Borderline”

“Complex PTSD” and “treatment”

“Complex PTSD” and “EMDR”

“PTSD” and “AXIS II pathology” and “treatment”

Despite the fact that the first clinical trials pertaining to EMDR and DBT began to emerge in 1993, this researcher will match the start date of the literature search with the inception of the BPD diagnosis into the DSM in 1980, as Peticrew (2006) suggested a

wide margin of error in determining the chronological origins of intervention types in the literature. The following databases will be consulted in the search for “gray” literature:

COPAC (<http://www.copac.ac.uk/copac/>)

Dissertation Abstracts (<http://www.proquest.umi.com/login>)

Ovid HealthSTAR Database (<http://www.ovid.com/site/products/ovidguide/hstrdb.htm>)

SIGLE (<http://www.kb.nl/infolev/eagle/frames.htm>).

This author will supplement the electronic search for independent findings by contacting experts in the field in order to identify studies that may either be in progress or missed by previous electronic searches. Preliminary investigation reveals the superior dedication of Marsha Linehan and Bessel A. Van der Kolk, in particular, to the topic under investigation. Therefore, attempts will be made to achieve contact with one or both of the above experts in order to broaden the scope of the search.

Criteria for Determination of Independent Findings

Lipsey and Wilson (2001) outlined three notable instances that may require protocol for establishing independent effect sizes and proposed guidelines for resolving such complications, the details of which are as follows. For studies that report multiple effect sizes for the same conceptual relationship, Gleser and Olkin (1994) provided guidelines for averaging the effect sizes to produce a single effect size as long as the covariance between dependent effect sizes may be calculated. In the event that statistical data is insufficient to permit calculation of the covariance, one effect size may be randomly selected for inclusion in the meta-analysis. For studies that include multiple measures of the same indicator at various follow-up points, writer will adopt criteria for determination

established by Wilson, Mitchel, and MacKenzie, (2007), who supported inclusion of the longest follow-up retained by 90% of the baseline sample. Finally, studies that utilize the same control group to calculate effect sizes for treatment-control comparisons between multiple experimental groups will be submitted to procedures for averaging dependent effect sizes outlined by Gleser and Olkin (1994), as the covariance between the effect sizes may be derived from the control group sample size.

Data Collection

The studies will be coded using a comprehensive coding instrument developed by Litell, Campbell, Green, and Toews (2007). This progressive, multi-level screening tool offers an initial eligibility screening related to study topic and design criteria explicitly defined by this researcher and proceeds with a systematic guide for the extraction of empirical data and outcome measures, followed by an overall assessment of study quality. Should the data yielded by this investigation support a hierarchical analysis, the studies screened for inclusion may be ranked based upon the rigor of the design, as well as the relevance of the content specific to the population and intervention (Petticrew, 2006). Rigor will be coded on a scale of 1 to 5, with 5 indicating the highest level of rigor. Writer will subscribe to the widely accepted hierarchy of evidence, which ranks research designs in the following order from highest level of scientific rigor to the lowest: systematic reviews, which will be coded as 5; meta-analyses (4); randomized controlled trials (3); quasi-experimental designs (2); and qualitative studies (1). Studies will be coded for relevance to the target population on a scale of 1 to 3, with 3 indicating the highest degree of relevance to the research question. Studies that involve participants

with both PTSD and BPD will be given the highest rank, while studies pertaining to the treatment of “Complex PTSD” will receive the second highest ranking, and studies that refer to the Borderline diagnosis alone will be coded as 1. With regard to intervention types, which will be ranked on a two point scale, studies that directly compare EMDR and DBT will be given the highest ranking (2), while studies that relate to the employment of either EMDR or DBT without direct comparison to one another will be assigned a ranking of 1.

Data Analysis

The statistical treatment of data will involve the following steps, as outlined by Petticrew (2006): narrative synthesis of the data; employment of the Q statistic and I (Squared) measure to test for heterogeneity; and meta-analysis of combinable data. The narrative synthesis serves as an adjunctive method of assessing for heterogeneity and involves categorizing the data to permit analysis within logical sub-groups, which will then be submitted to integrative analysis. Once a set of combinable data has been derived, the meta-analysis will proceed with a calculation of the difference between the means of the treatment and control groups, divided by the pooled standard deviation. Secondly, outcome measure will be converted to a standard scale, if necessary, to allow for the pooling of summary data to produce a single, summary effect size. It is assumed that eligible studies will report an effect size in the form of a standardized mean difference, correlation coefficient, or odds-ratio (Lipsey & Wilson, 2001). In the event that an eligible study provides only inferential statistics, in the absence of the descriptive statistics critical to effect size computations, Lipsey and Wilson (2001) provided

strategies for estimating the standardized mean difference, correlation coefficient, and odds ratio from various statistical data. For example, a statistical formula permits the calculation of a standardized mean difference effect size by using a t-value or F-ratio for studies that report only probability levels (Lipsey & Wilson, 2001). Eligible studies that fail to report an effect size will be submitted to further analysis, as outlined by Lipsey and Wilson (2001), and any calculations utilized to obtain an estimated effect size will be detailed. Lastly, Littell et al. (2008) emphasized the importance of rendering explicit any hypotheses regarding variables that may moderate effects; however, Littell et al. (2008) did caution against an overly zealous analysis, as the risk of a Type I Error increases in proportion to the number of subgroup analyses. With regard to the target population, this investigator hypothesizes that the age of initial exposure to trauma may be a moderating variable. More specifically, this researcher hypothesizes that individuals whose exposure to trauma began before the achievement of object constancy, which Mahler, Pine and Bergman (1975) place at roughly the third year of life, will demonstrate a less favorable response to treatment. In addition, the nature of traumatic exposure as having been chronic or discrete and the extent of exposure as having involved multiple incidents and/or perpetrators emerge as salient variables. On a behavioral level, the presence of active self-harm behaviors during the course of treatment looms as a critical variable in the quality and sustainability of treatment gains. In terms of target interventions, the degree of fidelity to treatment interventions must be considered as a potential moderator, especially in light of the trend toward modification evident in the treatment literature pertaining to DBT.

Verification

Investigator triangulation will be utilized to promote verification of study coding and analysis procedures: all stages of systematic review will be overseen by dissertation committee members. Littell et al. (2008) identified publication bias as the most potent threat to the validity of meta-analytic results and proposed the use of a funnel plot to assess for asymmetry. Furthermore, Littell et al. (2008) recommended the utilization of a trim-and-fill analysis to assess and adjust for publication bias and small-sample bias. The trim-and-fill method is an iterative process whereby unmatched observations are removed from the funnel plot, thus trimming the distribution, and then imputed values for missing studies are filled in to obtain an adjusted mean effect. Sensitivity analysis may also be used to test the consistency of results under different assumptions, as well as to determine the impact of modifying study inclusion/exclusion criteria on generated outcomes (Littell, 2008).

Ethical Considerations

The stigma attached to the borderline diagnosis carries social justice implications, given that the enterprise of therapy with borderline patients has been contaminated with the predetermining effects of poor prognostication. Allen (2008) challenged the assumption of chronicity often associated with the borderline diagnosis by referring to studies that demonstrate remission rates of borderline patients to be as high as 50% after four years. The stigma and undue pessimism associated with the diagnosis of BPD infuses the controversy related to the validity of this diagnosis with important ethical and political considerations. Many feminist authors emphasize the socially constructed

nature of diagnostic labels and frame the development of the borderline diagnosis as a method of “social control” which reflects an imbalance in the distribution of power within a given cultural context (Becker, 2000). The fact that BPD is diagnosed, on average, seven times more frequently among females than males certainly builds a case for gender based biases (Hodges, 2003). Brown (1994) fervently supported the practice of utilizing the diagnosis of complex PTSD, rather than BPD, and placed the need for a reexamination of the validity of BPD on a human rights level, as she bluntly asserted that the diagnostic label, borderline personality, portrays the client as being “deeply flawed as a human being at the very core” (p. 132). The present investigation constitutes an attempt to oppose the forces of stigma by working towards the establishment of practical guidelines for conducting therapy with traumatized, borderline individuals within the context of an inflammatory social climate.

Plan for Narrative/Timeframe for completion

Stages of review	Proposed date of completion
Clear definition of the question or hypothesis	December 1, 2010
Determine the types of studies that need to be located	December 15, 2010
Execute comprehensive literature search	September 1, 2011
Screen the results of that search (ensure consistency with inclusion criteria)	October 15, 2011
Critically appraise the included studies	November 1, 2011
Synthesize the studies and assess for heterogeneity	December 1, 2011
Disseminate the findings	April 1, 2012

CHAPTER FOUR
RESEARCH FINDINGS

Results of Literature Search

The literature searches were conducted by this researcher between December 6, 2011 and December 30, 2011 and involved consultation with the following databases:

Web of Science (<http://www.isinet.com/products/citations/ssci/>)

PsychInfo (<http://www.csaweb114v.csa.com>)

PubMed (<http://www.ncbi.nlm.nih.govquery.fcgi>)

Cochrane Collaboration (<http://www.cochrane.org>)

UICCAT-Online Book Search in UIC database

(<http://researchguides.uic.edu/healthsciences>)

ClinPSYC (<http://www.psycinfo.com/clinpsyc.html>)

International Bibliography of the Social Sciences

(<http://www.lsc.ac.uk/collections/IBSS/>)

Medline (<http://www.ovidsp.tx.ovid.com>)

Sociofile (now Sociological Abstracts) Sociological Abstracts

(<http://www.csa.com/csa/factsheets/socioabs.shtml>)

Social Services Abstracts (<http://www.csa.com/csa/factsheets/socserv.shtml>)

Social Work Abstracts

(<http://www.naswpress.org/publications/journals/abstracts/swabintro.html>)

Social Sciences Citation Index (now Web of Science)

COPAC (<http://www.copac.ac.uk/copac/>)

Dissertation Abstracts (<http://www.proquest.umi.com/login>)

Ovid HealthSTAR Database (<http://www.ovid.com/site/products/ovidguide/hstrdb.htm>)

SIGLE (<http://www.kb.nl/infolev/eagle/frames.htm>).

The following key work combinations were utilized:

“EMDR treatment” and “PTSD”

“PTSD and “comorbid personality disorder”

“PTSD” and “Borderline Personality Disorder”

“PTSD” and “Borderline”

“EMDR” and “DBT” and “Borderline Personality”

“EMDR” and “DBT”

“PTSD” and “Borderline” and “treatment”

“EMDR” and “Borderline”

“Complex PTSD” and “treatment”

“Complex PTSD” and “EMDR”

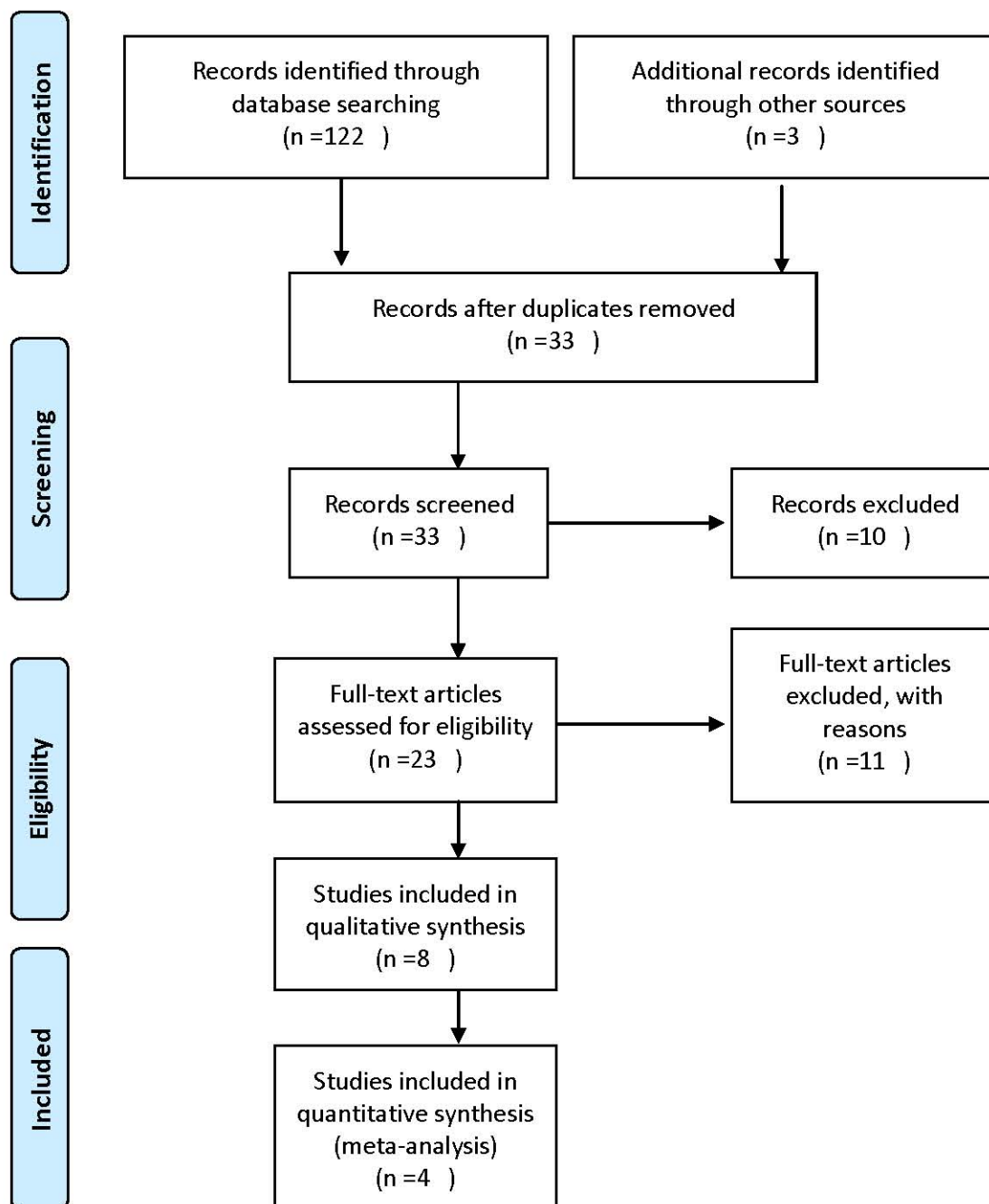
“PTSD” and “AXIS II pathology” and “treatment”

As previously detailed, criteria for inclusion and exclusion were established at the outset of this research study and listed according to the type of study, intervention, population, and outcomes. With regard to the type of study and outcome measures, no study was excluded based upon the design or nature of outcome measures utilized. The current review was limited to a comparison of the interventions of EMDR and DBT with a target population of individuals with comorbid BPD and PTSD. A diagnosis of

complex PTSD was also included as an acceptable population parameter, owing to its high correlation with Type I trauma and, more specifically, Borderline pathology. Two single group pre-post studies and two randomized-controlled trials were yielded by the current search and abstention from meta-analysis was warranted based upon the limitations to moderator analysis and statistical power imposed by minimal data (Littell et al., 2008). Thirty-three records were identified after duplicates were removed and this total includes all articles that made any reference to the treatment of PTSD using EMDR or DBT. Ten records were excluded after review of the abstracts revealed a focus on the treatment of simple PTSD in the absence of comorbidity or childhood onset trauma. Reasons for the exclusion of full text articles and details of excluded full-text studies will be provided. The results of the search are presented in the following QUOROM flow chart (Figure 1), taken from www.prisma-statement.org.

As noted in Figure 1, three studies were identified through sources other than the database search. Two studies (Edmond, Rubin, & Wambach, 1999; Ford, Courtois, Steele, Van der Hart, & Nijenhuis, 2005) were identified by searching the bibliographies of included studies. A third and unpublished study was yielded through successful consultation with experts in the field, which fulfills systematic review protocol and assists in the identification of studies that may not have been yielded by the proposed search strategy.

Figure 1. Flow Chart of Literature Search Results



Marsha Linehan, PhD, graciously responded to this researcher's request for relevant studies and provided a referral to Melanie Harned, PhD, who has conducted numerous

studies pertaining to the treatment of individuals with comorbid BPD and PTSD. Dr. Harned provided this researcher with a study that was in print at the time of the data search and has since been published. The study retains primary relevance to the present investigation and relates to the treatment of PTSD in a sample of suicidal and self-injuring women with comorbid BPD, who participated in one year of DBT with a modified Prolonged Exposure protocol. The contribution of Dr. Harned and Dr. Linehan attenuates the influence of convenience sampling and publication bias, which Littell et al. (2008) referred to as the “file drawer problem,” on the current findings and provides critical data related to a newly developed modification of DBT often referred to as DBT-PTSD (p. 52). Details of all included studies will be provided following a summary of studies that did not meet inclusion criteria for the current investigation.

Excluded Studies

As noted in Figure 1, 11 studies were excluded from this review, four of which were excluded due to their unavailability in English (Bohus & Hoeschel, 2006; Lieberman, Hofman, & Flatten, 2003; Muller, & Sachsse, 2010; Rosner, Henkel, Ginkel, & Mestel, 2010). Among the remaining seven studies, one study (Hembree, Cahill, & Foa, 2004) was excluded due to a singular focus on cognitive restructuring as the target intervention. Another study (Kraftcheck, Muller, & Wright, 2007) was excluded because it examined the efficacy of a comprehensive inpatient treatment regimen that appears to integrate various components of multiple treatment approaches with no explicit allegiance to a dominant modality. The remaining five studies (Bisson, Ehlers, Matthews, Richards, & Turner, 2007; Harned, Jackson, Comtois, & Linehan, 2010; Lazrove, Triffleman, Kite,

McGlashan, & Rounsaville, 1998; Rittenhouse, 2000; Schottenbauer, Glass, Arnkoff, & Gray, 2008) failed to meet population specific inclusion criteria for this study. The systematic review of 38 randomized controlled trials of psychological treatments for PTSD conducted by Bisson et al. (2007) stipulated a primary diagnosis of PTSD as the central criteria for inclusion with no limitations placed upon the severity of PTSD symptoms or comorbidity; however, none of the included studies provided data derived from samples stratified according to diagnostic acuity or comorbidity. Lazrove et al. (1998) and Rittenhouse (2000) focused on the treatment of individuals with adult onset PTSD, rather than complex or early onset trauma, and no reference to comorbidity is made in either of these studies. Schottenbauer et al. (2008) provided a conceptual article focused on the treatment of individuals with trauma; however, comorbidity with BPD is only briefly mentioned and illustrated by references to two studies that utilize Prolonged Exposure with this population. Finally, Harned et al. (2010) was eliminated because this study, as well as a second study (Harned, Chapman, Dexter-Mazza, Murray, Comtois, & Linehan, 2008), reported data from the same sample, which originated in a randomized controlled trial conducted by Linehan, Comtois, Murray, Brown, Gallop, Heard, Korslund, Tutek, Reynolds, and Lindenboim (2006). Building upon the parent study (Linehan et al., 2006), Harned et al. (2008) and Harned et al. (2010) provided data relevant to the specific comorbidity targeted by the current study. The decision to exclude Harned et al. (2010) was based upon the fact that the design of this study (single group pre-post) is less rigorous than that of Harned et al. (2008), which utilized a control group and standardized outcomes measures. Table 1 (below) provides a detailed

summary of excluded studies, including the rationale for exclusion, with the exception of the four studies excluded on the basis of language. As stated previously, four studies were excluded due to their unavailability in English, thus rendering any data contained within these studies inaccessible to this researcher and therefore unavailable for inclusion in the table below.

Table 1. Characteristics of Excluded Studies

<u>Study</u>	<u>Subjects</u>	<u>Results</u>	<u>Appraisal</u>
Bisson et.al. (2007)	Review of 38 randomized controlled trials of psychological treatments for PTSD with both female only and mixed gender studies.	Trauma focused cognitive behavioral therapy (TFCBT) showed the highest level of overall efficacy, although EMDR was also generally supported by the data, albeit to a lesser degree than TFCBT.	Exclude based upon absence of sample groupings according to level of pathology and/or comorbidity.
Harned et al. (2010)	51 suicidal and/or self-injuring women with BPD, 26 of whom also met criteria for PTSD.	Participants with BPD and without comorbid PTSD were given DBT and showed significant reductions in imminent suicide risk and self-injury.	Exclude. Duplicate sample utilized.
Hembree et al. (2004)	75 adult female survivors of sexual assault with chronic posttraumatic stress disorder, 39% of whom also met criteria for comorbid personality disorders.	Cognitive behavioral therapy and community treatment by experts resulted in significant remission of PTSD symptoms; however, participants with comorbid personality disorders were less likely to achieve good end state functioning.	Exclude. Provides evidence to support use of cognitive restructuring, despite limited efficacy relative to control, but does not address target interventions for this study.

Kraftcheck et al. (2007)	123 adult survivors of abuse who completed a 6-week inpatient program for PTSD and who were divided into four personality disorder groups, including borderline.	Participants received an eclectic regimen of therapy involving a mixture of group and individual therapy sessions, with group topics ranging from psychoeducation to art therapy. Depression and hopelessness symptoms were found to decrease over time and treatment gains were generally maintained at one year follow-up.	Exclude. The treatment rendered in this study does not identify allegiance with any manualized or unitary approaches that might permit comparison to competing interventions.
Lazrove et al. (1998)	Mixed gender sample of 8 adults with chronic PTSD referred to study by local professionals.	Participants received three 90 minute sessions of EMDR at one week intervals and showed significant decreases in pathology and disturbance as measured by the Clinician Administered PTSD Scale (CAPS).	Exclude. Data supports efficacy of EMDR in the treatment of PTSD but severe personality disorders listed as exclusion criteria for this study.
Rittenhouse (2000)	Case illustration utilized to highlight conceptual themes.	Case reported anecdotally as a means of reference to illustrate theory related to the treatment of simple PTSD.	Exclude. Due to focus on adult onset trauma, rather than early onset, complex trauma.
Schottenbauer et al. (2008)	Conceptual article pertaining to empirically	Literature review supports the use of psychodynamically	Exclude. Due to a lack of reference to the use of EMDR

Schottenbauer et al. (2008) (cont'd)	supported treatment interventions for PTSD.	oriented psychotherapy with trauma victims; however, the authors refer to the need for further research to clarify optimal approaches for the treatment of severe comorbidity.	and/or DBT with complex trauma patients.
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Included Studies

Randomized Controlled Trials

No studies providing a direct comparison between EMDR and DBT with persons diagnosed with comorbid BPD and PTSD were discovered by this search. Given the fact that severe personality disorders and active self-harm behaviors appeared as exclusion criteria in a significant proportion of studies, it is not surprising that only three randomized controlled trials were yielded by the current investigation. Interestingly, two of the studies (Van der Kolk, Spinazzola, Blaustein, Hopper, Korn, & Simpson, 2007; Harned et al., 2008) reported loss of PTSD diagnosis as the primary outcome of interest, which reflects an increasing emphasis within the literature on attending to the influence of residual trauma on long-term recovery, as well as preparedness for trauma focused interventions. Harned et al. (2008) examined the efficacy of DBT in achieving remission of comorbid Axis I disorders in a population of Borderline individuals, 40 of whom met criteria for comorbid BPD and PTSD. Of the 26 participants with comorbid BPD and PTSD assigned to the DBT treatment group, 34.8% achieved full remission from PTSD symptoms at the conclusion of one year of treatment, whereas 23.5% of the 14

participants assigned to one year of community treatment by experts achieved full remission from PTSD symptoms. Full remission of PTSD symptoms was measured by the Longitudinal Interval Follow-Up Evaluation (LIFE), which is a semistructured interview used to gather retrospective ratings of AXIS I disorders. Based upon scores obtained using LIFE, researchers assigned weekly psychological status ratings (PSR) to designate level of impairment with values ranging from 1 (none) to 3 (moderate). Full remission was defined as at least 8 consecutive weeks with minimal or no symptoms, as reflected by a score of 1 on the PSR. Overall, results from this study indicated that participants with comorbid anxiety disorders, including PTSD, achieved lower remission rates than participants with other Axis I comorbidities, such as depression and eating disorders. The authors referred to similar findings presented by Zanarini, Frankenburg, Hennen, Reich, and Silk (2004), who found that high rates of anxiety disorders lingered in a BPD sample, thus supporting the conclusion that the combination of anxiety disorders and BPD may limit the success of singular approaches.

Van der Kolk et al. (2007) examined the efficacy of EMDR in achieving remission of PTSD symptoms in a sample of adults with both early onset and adult onset trauma. Among the 11 participants with early onset trauma assigned to 8 weeks of EMDR treatment, 72.7% achieved loss of PTSD diagnosis, as measured by a score below 20 on the Clinician Administered PTSD Scale (CAPS), whereas 57.1% of the 14 individuals assigned to a pill placebo group achieved loss of PTSD diagnosis. Thus, EMDR resulted in remission of PTSD symptoms in the majority of childhood onset trauma survivors, particularly when compared to the placebo group; however, an important finding of this

study pertains to the fact that 100% of adult onset trauma victims achieved remission from PTSD symptoms following 8 weeks of treatment, thus diminishing the relative effects of EMDR within the childhood onset sample. This finding, which became more pronounced at 6 month follow-up, raises important questions regarding the tolerability of EMDR with complex trauma patients and appears to challenge the perception of some authors (Korn & Leeds, 2002; Greenwald, 2007), who recognized the Resource Development and Installation phase of EMDR as a preparatory exercise with the potential to extend tolerability to even the most complex patients. One must bear in mind, however, that the relatively short length of treatment (eight weeks) utilized in this study looms as an important variable, given that adequate “resourcing” of high acuity patients may take up to one year.

The third and final randomized controlled trial included in this study (Edmond, Rubin, & Wambach, 1999) built upon the findings of Van der Kolk (2007) by examining the efficacy of EMDR in reducing PTSD symptomology in a sample composed entirely of adult female survivors of childhood sexual abuse. Fifty-nine participants were assigned to one of the following three conditions: six sessions of individual EMDR treatment; six sessions of routine individual treatment; or a delayed treatment control group. The following standardized measures were all utilized to assess the status of PTSD symptoms, which was identified as the primary outcome of interest: State Trait Anxiety Inventory (STAI); Beck Depression Inventory (BDI); Impact of Events Scale (IES); and the Belief Inventory (BI). Results from the primary outcome measure, STAI, indicated that at posttest the EMDR mean of 34.7 and the routine individual treatment mean of 40.4 were

significantly better than the control mean of 54.0. Although the difference between EMDR and routine individual treatment was not significant at posttest, a large effect size of 1.2 was calculated for the difference between the EMDR mean of 30.1 and the routine individual treatment mean of 41.8 at 3 month follow-up. In interpreting this finding, the authors speculated that the post treatment drop in PTSD symptoms reported within the EMDR group may reflect the assertion, attributed by the authors to Shapiro (1995), that EMDR enables clients to continue processing traumatic memories after the treatment has ended.

Single Group Pre Post Designs

Two studies (Stiel, Dyer, Priebe, Kleindienst, & Bohus, 2011; Harned, Korslund, Foa, & Linehan, 2012) were discovered within this category, both of which provide empirical data related to the utilization of modified versions of DBT in a population of individuals with childhood sexual abuse. Stiel et al. (2011) boasted a sample population comprised entirely of individuals diagnosed with PTSD related to childhood sexual abuse with the addition of an Axis I or II comorbidity, including BPD. Although not all participants met criteria for both PTSD and BPD, this study meets inclusion criteria in its targeting of individuals with complex trauma and comorbidity. Stiel et al. (2011) investigated the response of 29 inpatient women with PTSD related to childhood sexual abuse to DBT-PTSD, which is a modification of DBT infused with components of trauma-focused, cognitive-behavioral therapy techniques. At the conclusion of three months of residential treatment, an effect size of 1.22 on the Posttraumatic Diagnostic Scale (PDS) was found between baseline and follow-up; however, it should be noted that this calculation is based

on the response of 25 treatment completers, rather than an intent-to-treat sample. Harned, Korslund, Foa, and Linehan (2012) conducted a study involving 13 women with BPD, PTSD, and recent and/or imminent self-injury, who participated in one year of DBT with modified Prolonged Exposure. Based upon results of the PTSD Symptoms Scale Interview (PSS-I) to assess for severity of PTSD symptoms, Harned et al. (2012) found that 71.4% of treatment completers and 60% of the intent-to-treat sample no longer met criteria for PTSD at the completion of treatment. Secondary outcomes, such as suicidal ideation and dissociation, also showed significant improvement at the conclusion of treatment, thus providing evidence to support the efficacy of DBT with modified Prolonged Exposure, which was specifically developed to treat comorbid BPD and PTSD individuals.

Despite limits to generalizability imposed by the absence of a control group, these studies build upon the findings of the randomized controlled trials included in this study in two important ways. First, Harned et al. (2012) provided practical and behaviorally demonstrable criteria that may be used to assess the readiness of individuals to tolerate trauma-focused treatment. The criteria, which move well beyond the realm of abstraction typified by notions such as “object constancy” are as follows: not at imminent risk of suicide; no episodes of self-injury in past two months; ability to control life-threatening behaviors when in the presence of triggers; no significant therapy-interfering behaviors; PTSD is most important goal of patient; and ability and willingness to tolerate intense emotions without avoiding/dissociating (Harned et al, 2012). Although Stiel et al. (2011) did not expressly refer to the importance of meeting specific therapeutic gains prior to the

initiation of trauma-focused CBT, this study, as well as Harned et al. (2012), achieved the aim of therapeutic integration, the potential need for which was identified by Harned et al. (2008). Both of these studies provided evidence to support the efficacy of integrating components of either trauma-focused CBT or Prolonged Exposure into the structure of DBT in order to address the special needs of this population. In both of these studies, the interventions were rendered concurrently, although Harned et al. (2012) endorsed a phase-oriented approach, which highlights the need for careful assessment in order to ensure that patient variables remain the highest priority in determining the nature and timing of integrating trauma focused strategies. The task of successful therapeutic integration emerges as a challenge, particularly in the treatment of high acuity patients. The case studies discovered by the current review highlight the challenges associated with the successful blending of therapeutic interventions in a manner that fortifies, rather than dilutes, the essential elements of foundational strategies.

Case Studies

Although lacking in methodological rigor, case studies can provide rich data to assist clinicians in navigating the complex terrain of manualized treatment modifications. Four case studies (Harned & Linehan, 2008; Becker, 2002; Brown & Shapiro, 2006; Korn & Leeds, 2002) were identified by the literature search, two of which provide detailed case examples that illustrate the use of DBT modified with trauma-focused exposure techniques. Becker (2002) described the use of DBT modified with Exposure Response Prevention (ERP) and Prolonged Exposure (PE) to treat a 43 year old, unemployed, divorced Caucasian female with comorbid OCD, PTSD and BPD. The client participated

in 49 sessions over a 10 month period and demonstrated significant reductions in symptoms related to OCD and PTSD, as measured by the Self-Report Yale Brown Obsessive-Compulsive Scale (Y-BOCS), Maudsley Obsessive-Compulsive Inventory (MOC), and the Beck Depression Inventory (BDI). Although Becker (2002) did not reference an established set of criteria in her assessment of the readiness of her client to engage in trauma focused interventions, she did acknowledge the need for such a targeted evaluation and referred to the importance of ensuring that the client exhibits the ability to tolerate strong emotions prior to the integration of trauma focused techniques. Another noteworthy contribution of this study relates to the client's favorable critique of the preparatory DBT phase of treatment that involves psychoeducation concerning the biosocial theory and the use of validation to demonstrate sensitivity to the interaction of biological and environmental vulnerabilities posited by the theory, which the client characterized as having been critical to the requisite establishment of trust within the therapeutic relationship. In terms of providing practical guidelines to aid in the clarification of when and how to integrate trauma focused treatment components, Harned et al. (2008) provided a detailed account of the methods they employed to interweave standard Prolonged Exposure techniques within the structure of DBT.

Similar to Becker (2002), Harned and Linehan (2008) implemented DBT modified with Prolonged Exposure with two Caucasian women, ages 30 and 48, presenting with diagnoses of BPD and PTSD and extensive histories of suicidal and nonsuicidal self-injury. In both cases, the decision to introduce prolonged exposure into the treatment was collaborative and involved an honest appraisal of the potential risks by both client and

therapist. In order to promote safety during the exposure related tasks, clients were asked to identify DBT skills that they could use to combat urges to self-injure and/or commit suicide throughout the course of treatment and standard Prolonged Exposure was modified to augment tolerability by means of adjusting the timing and delivery of in vivo exposure, which was introduced within session, rather than as homework, in exposure session 3 as opposed to session 2. Based upon ratings generated by the PTSD Symptom Checklist (PCL) and the Borderline Symptom Checklist (BSL), both women demonstrated dramatic reductions in symptom acuity at posttreatment, as scores for client 1 dropped from 76 to 32 on the PCL and from 29 to 12 on the BSL, while scores for client 2 dropped from a pretreatment score of 49 to 29 on the PCL. Client 2 did not demonstrate significant changes in Borderline symptoms, as demonstrated by a slight increase in her score on the BSL from 22 at pretreatment to 28 posttreatment; however, she did report a high level of satisfaction with the treatment overall. More specifically, client 2 reaffirmed the benefits of timing the integration of exposure techniques to correspond to the following client variables: strong understanding and use of core DBT skills; high level of motivation to address trauma related issues; and solid commitment to abstain from self-injury or commit suicide. Despite evidence in support of therapeutic integration, one might contend that a unitary approach with a targeted and sequential structure remains favorable, especially when one considers the challenges of successful integration with multi-diagnostic patients. The remaining case studies present EMDR as having the potential to meet this need.

Brown and Shapiro (2006) and Korn and Leeds (2002) presented the case for implementing EMDR in the treatment of patients with BPD, in light of ample studies documenting the correlation between Borderline pathology and trauma, a review of which was previously provided. Brown and Shapiro (2006) described the successful implementation of EMDR delivered in a total of 20 sessions over a 6 month period with a 43 year old, married female with diagnoses of BPD and PTSD related to a history of chronic emotional abuse by mother and sexual abuse at the age of 8 by a cousin. As measured by 11 subscales of the Inventory of Altered Self Capacities (IASC), the client demonstrated a loss of clinically significant ratings at posttreatment and 7 month follow-up, as demonstrated by the fact that her scores on the subscales ranged from 86 to 100 at pretreatment and from 46 to 68 at posttreatment, falling below the threshold for clinical significance of 70. The authors attributed the success of the treatment, in part, to the strength of the preparatory phase of EMDR that targets the development of affect management skills through the use of relaxation strategies and the safe-place exercise, which fosters the reinforcement of supportive images from either client-based or relational sources. Similar to Harned and Linehan (2008) and Becker (2002), the authors referred to the importance of assessing the client's ability to tolerate intense emotions prior to introducing trauma work. This study provides some evidence, albeit anecdotal, that EMDR may be tolerable to clients with BPD comorbidity; however, it should be noted that the client in this study did not endorse active suicidal or self-injurious impulses, thus preserving the possibility that symptom severity may have been a potent variable in the client's treatment response. In an attempt to address the need for studies

that examine the efficacy of EMDR with high acuity patients, Korn and Leeds (2002) provided data pertaining to two case studies, which will be presented next.

Korn and Leeds (2002) illustrated the efficacy of the Resource Development and Installation phase of EMDR in achieving stabilization in the initial phase of treatment with two severely comorbid clients, both presenting with a diagnosis of Complex PTSD related to severe and chronic childhood abuse. The authors outlined the following central tasks associated with the RDI phase of EMDR: symptom stabilization; amelioration of attachment and emotion regulation impairments; establishment of coping skills; and strengthening of self-soothing capacities. Both clients were female, ages 39 and 31, and both clients reported active symptoms of PTSD, depression, and anxiety. Client 1 also described patterns of social avoidance and severely disordered eating in the context of self-destructive intent and client 2 endorsed active self-harm in the form of episodic cutting on arms, accompanied by frequent anger outbursts. At the conclusion of six weeks of EMDR treatment with a singular focus on the Resource Development and Installation (RDI) Phase, both clients demonstrated significant reductions in symptom acuity, as demonstrated by significantly reduced scores on both the Trauma Symptom Inventory (TSI) and the Symptom Checklist-90 (SCL-90) Revised. For this population, the authors established a criterion of 5 T-score points for change to be considered clinically significant. Based upon this standard, client 1 showed a significant decrease in 7 of 10 subscales of the TSI and 10 of the 12 subscales of the SCL-90. Similarly, client 2 demonstrated significant reductions in 9 of 12 dimensions of the SCL-90 and 6 of 10 subscales of the TSI. While the authors recognized that this data remains anecdotal and

thus limited in its ability to generalize to other populations, the authors urged future research that may clarify the potential for EMDR to effectively deliver both stabilization and trauma resolution with high acuity, multi-diagnostic patients. Tables 2 and 3 (below) provide a summary of both sample and treatment characteristics of all included studies.

Table 2. Sample Characteristics of Included Studies

Author	Subject(s) age	Subject(s) gender	Sample size	Sample diagnosis	Study Design
Becker (2002)	43	Female	1	BPD, PTSD, OCD	Case Study
Brown et. Al. (2006)	43	Female	1	BPD, MDD	Case Study
Edmond et al. (1999)	Mean age of 35	Female	39	Childhood onset trauma	RCT
Harned & Linehan (2008)	30, 48	Female	2	Client 1-BPD, Bipolar; Client 2-BPD, PTSD, panic disorder	Case study
Harned et al. (2008)	18-45	Female	40	BPD, PTSD	RCT
Harned et al. (2012)		Female	13	BPD, PTSD	Single group pre post
Korn et al. (2002)	39, 31	Female	2	Client 1- PTSD, Bulimia; Client 2-BPD, PTSD	Case study
Stiel et al. (2011)	Ranged from 20 to 51	Female	29	Childhood onset trauma	Single group pre post
Van der Kolk et al. (2007)	Ranged from 18 to 65	Female	25	Childhood onset trauma	RCT

Table 3. Treatment Characteristics of Included Studies

Author	Intervention Type	Fidelity	Duration	Control group description	Outcome	Findings
Becker (2002)	DBT-MPE	Limited data. Reference made to use of DBT manual.	10 months	NA	50% reduction in scores on both MOC and Y-BOCS.	Suggestive .
Brown et al. (2006)	EMDR	Adherence to 8 phase model of EMDR stated but no other data provided.	6 months	NA	Scores on IASC ranged from 86 to 100 pretreatment and 68 to 46 posttreatment, with clinically significant improvement.	Suggestive .
Edmond et al. (1999)	EMDR	Sessions taped and reviewed by EMDR expert.	6 sessions	Delayed treatment	Both EMDR mean (34.7) and routine treatment mean (40.4) significantly better than control mean (54.0) as measured by STAI.	Suggestive .
Harned & Linehan (2008)	DBT-MPE	Clinicians formally trained using original DBT manual (Linehan, 1993).	One year	NA	Scores for Client 1 on PCL dropped from 76 out of 85 at pretreatment to 32 at posttreatment. Client 2 dropped from 49 to 29 on PCL.	Suggestive .

Harned et al. (2008)	DBT	Clinicians completed 45 hour DBT seminar and were approved once 6 out of 8 recorded case sessions met adherence.	One year	Community treatment by experts	74% of DBT patients and 67% of community treatment by expert patients achieved full remission from comorbid Axis I disorders at posttreatment.	Inconclusive.
Harned et al. (2012)	DBT-MPE	All but one therapist attended DBT intensive training and all therapists completed PE intensive training.	One year	NA	Reliable improvement in PTSD symptoms found at posttreatment for 85.7% of DBT-PE patients and for 70% of the intent-to-treat sample.	Suggestive .
Korn et al. (2002)	RDI Phase of EMDR	Treatment sessions videotaped and reviewed by developer of RDI protocol to ensure fidelity.	6 weeks	NA	For both clients, treatment means for daily target behaviors were at least 50% less at posttreatment compared to baseline measures.	Suggestive .
Stiel et al. (2011)	DBT-PTSD	Reference made to adherence to DBT manual, no other data provided.	6 weeks	NA	Mean scores for the PDS decreased from 2.13 at baseline to 1.66 at posttreatment and to 1.38 at 6 week follow-up.	Suggestive .

Van der Kolk et al. (2007)	EMDR	Clinicians received extensive training in EMDR from senior EMDR instructor. All sessions videotaped and randomly sampled sessions independently evaluated to assess fidelity.	8 weeks	Pill placebo	At end of treatment, drop in CAPS score was 59% for EMDR group and 43.6% for pill placebo group. Adult-onset trauma patients significantly more likely to lose PTSD diagnosis than child-onset trauma patients.	Inconclusive.
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Statistical Procedures

Meta-analysis can be performed with as few as two studies (Littell et al., 2008); however, studies limited in number and rigor introduce limits to statistical power and restrictions on the exploration of potential moderators that support abstention from meta-analysis. In the case of the current review, only two randomized controlled trials reported data in a format that permitted comparison, as Harned et al. (2008) reported outcomes dichotomously, with the determining event defined as full remission of PTSD symptoms. Although effect sizes are typically calculated as a precursor to meta-analysis, Lipsey and Wilson (2001) supported the use of effect size calculations to permit meaningful comparisons across studies and establish parameters for determining the type of effect calculation most appropriate to the nature of findings. With regard to the two randomized controlled trials that permitted comparison (Van der Kolk et al., 2007; Edmond et al., 1999), this researcher utilized a standardized mean difference calculation,

rather than an unstandardized mean difference, basing the need for the former upon the fact that the studies utilize different outcome measures to operationalize the same dependent variable (Lipsey & Wilson, 2001). The standardized mean difference was calculated by means of subtracting the mean for the treatment group from the mean for the control group and then dividing that value by the pooled standard deviations of both groups. The standardized mean difference was then submitted to a Hedges correction (Hedges, 1981) that corrects for the tendency of effect size indices to be upwardly biased when based on small sample sizes.

The single group pre post studies (Stiel et al., 2011; Harned et al., 2012) were treated separately, given that Lipsey and Wilson (2001) reinforced the qualitative distinction between studies that facilitate group contrasts and those that compare the same group at two different points in time, in the manner of single group pre post designs. Similar to the randomized controlled trials, the effects sizes for the single group pre post studies were also standardized, given that each of the two studies utilized a different operationalization of the dependent variable. In calculating the standardized mean gain score for studies within this category, this researcher utilized statistical procedures outlined by Borenstein (2009), who provided guidelines for the estimation of effect sizes from paired t-test calculations and pre and post treatment scores. Given that neither of the studies within this category reported correlations for the relationship between the interventions and outcomes, the correlations were assumed to be 0.7 and 0.9 for pre and post treatment respectively. The pre and post treatment effect sizes for Stiel et al. (2011) were calculated using a formula adapted by Borenstein (2009) that utilized paired t-test

values to arrive at an estimation of effect sizes, while effect sizes for Harned et al. (2012) were calculated from pre and post scores using an estimation of the standard deviation within groups, the procedures for which were also provided by Borenstein (2009). Table 4 provides the outcome measure, number of participants in treatment and control groups, mean and standard deviation for both groups, and the standardized effect size calculated by this researcher. Table 5 provides the same values for the single group pre post studies, modified to account for the two variable comparison, rather than group comparison, offered by the single group pre post study design.

Table 4. Statistical data for randomized controlled trials

Author	Measure	# in tx group (EMDR)	# in control group	M(SD) for tx group	M(SD) for control group	Effect size (se) 95%CI
Van der Kolk et al. (2007)- EMDR v. pill placebo for adults with childhood trauma.	CAPS	N=11	N=14	38.36(20.73)	46.57(20.18)	(0.17) [0.06, 0.50]
Edmond et al. (1999)- EMDR v. delayed treatment for adults with childhood trauma.	STAI	N=20	N=19	34.7(10.7)	54(17.3)	(0.13) [1.06, 3.41]

Table 5. Statistical data for single group pre-post studies

Author	Measure	# in tx group (DBT-PTSD, MPE)	M(SD) at pretreatment	M(SD) at posttreatment	Effect size (se) 95% CI (pre tx r value=.7, post tx r value=.9)
Stiel et al. (2011)- DBT-PTSD compared at pre and post treatment for adults with childhood trauma.	PDS	N=25	2.13(.40)	1.66(.69)	Pretreatment- (0.967) [0.60, 1.33] Posttreatment- (0.558) [0.37, 0.75]
Harned (2012)- DBT-MPE compared at pre and post treatment for adults with BPD and PTSD.	PSS-I	N=13	35.5(10.1)	15.2(11.7)	Pretreatment- (1.44) [-1.15, 0.65] Posttreatment- (0.83) [-0.24, 1.02]

As shown in Tables 4 and 5, the standardized effect sizes demonstrate some variability across study design and intervention type. Littell et al. (2008) provided some guidance in the interpretation of effect sizes and identified the following pairings of numeric values and levels of significance: .2 indicates a small effect; .5 indicates a medium effect; and values larger than .8 are indicative of a large effect. Based upon these guidelines, Harned et al. (2012) and Stiel et al. (2011) may be interpreted as

demonstrating a large effect, or strength of the relationship between variables, given that these effect sizes are both significantly different from zero. Conversely, Van der Kolk et al. (2007), Edmond et al. (1999) demonstrated more modest effects in the relationship between variables. Overall, the above findings support the efficacy of EMDR when compared to a control group and offer support, albeit less rigorous, for the efficacy of modified DBT in the treatment of comorbid PTSD and BPD individuals. The above data must be interpreted with some caution and evaluated with potential sources of bias in mind. More than 20%, or two out of eight studies, were independently coded by a peer using the screening tool developed by Litell et al. (2007) (See Appendix A) with an agreement rate of 87% ($Kappa=.54$). Allocation concealment was met for Van der Kolk et al. (2007) but adherence to this standard is unclear in the case of Edmond et al. (1999). With regard to blinding, it is well accepted that double blinding is near impossible in research that examines psychological interventions, given that subjects are likely to know which treatment they are receiving (Bisson et al., 2007); however, blinding of the assessor to assignment is feasible and was met for Van der Kolk et al. (2007) yet unmet for Edmond et al. (1999). Van der Kolk et al. (2007) does, however, meet criteria for the effects of attrition bias, due to the fact that the dropout rate for the childhood onset subsample in this study exceeded 20%, although it should be noted that an intent-to-treat sample was utilized to minimize bias. Stiel et al. (2011) failed to utilize an intent-to-treat sample in calculating treatment effects and limited data regarding the reasons for dropout restricts the potential for inferences concerning treatment tolerability. Harned et al. (2012) utilized an intent-to-treat sample and dropout rates were not significant for the

effects of attrition bias. Given the general paucity of empirical literature pertaining to this population, this chapter will close with a brief overview of the conceptual and theoretical literature generated by the database search.

Conceptual Literature

Five conceptual articles were yielded by the current investigation (DeJongh, Broeke, & Meijer, 2010; Ford, Courtois, Steele, Van der Hart, & Nijenhuis, 2005; Korn, 2009; Kudler, 1993; Vignarajah & Links, 2009). Despite a lack of scientific rigor and explanatory power, theoretical literature reflects the complexity of micro level experience and offers a heuristic that unites intuition and informed hypothesizing. With regard to the current investigation, which is limited by a scarcity of empirical data, theoretical literature may offer some insights with regard to directions for future research and may strengthen or challenge the intuitive validity and clinical soundness of the interventions targeted by the current investigation. Among the five articles discovered within this category, two articles held limited relevance to the topic under investigation (Kudler, 1993; Vignarajah & Links, 2009). Kudler (1993) provided a brief commentary on the clinical feasibility of adult onset BPD without reference to treatment considerations, thus prompting exclusion. Vignarajah and Links (2009) explored the influence of BPD and PTSD comorbidity on overall pathology and treatment outcomes and offered the conclusion, aided by a review of existing literature, that comorbidity may accentuate certain symptoms, which are identified as follows: anger; anxiety and avoidant behaviors; and suicide proneness. Relevance of this article to the current investigation is limited by the fact that DBT is only briefly mentioned as one strategy listed among

several empirically supported interventions that may be used to achieve initial stabilization as part of a multi-phase approach in the treatment of clients with comorbid PTSD and BPD. Despite limited relevance, Vignarajah and Links (2009) amplified the risk of harm associated with the miscalculated treatment of this population, identifying the paramount task of titrating the treatment of PTSD in a manner that assigns critical importance to the severity of Borderline pathology. Vignarajah and Links (2009) reinforced the merits of therapeutic integration and phase oriented treatment delivery, which finds further support in the remaining three studies under this heading, which will be described next.

Ford et al. (2005) resoundingly asserted that no scientific evidence exists to support the use of a phase oriented approach in the treatment of persons with comorbid PTSD and BPD; however, the logic and intuitive merits of such an approach derive their strength from the ethical mandate of reducing the potential for harm to clients, given that the potential for regression posed by the premature introduction of trauma focused work presents obvious risks to the safety of high acuity Borderline patients. Ford et al. (2005) provided suggestions for conducting treatment organized around the following tasks: initial stabilization; trauma-focused interventions; and enhancing daily living. Ford et al. (2005) identified DBT as an efficacious strategy for achieving initial stabilization and identified Cloitre's STAIR-MPE (Skills in Affective and Interpersonal Regulation with Modified Prolonged Exposure), and Najavit's Seeking Safety as sound alternatives. Interestingly, Ford et al. (2005) seemed to support trauma focused interventions that assess the imprints of past traumas on current functioning, rather than imposing the task

of direct trauma reprocessing and resolution, in the treatment of Complex PTSD. De Jongh et al. (2010) and Korn (2009) supported the need for a stepwise approach to the treatment of the target population; however, these authors contend that multiple treatment goals do not necessarily translate into the need for a multimodal approach. DeJongh et al. (2010) expanded the relevance of EMDR by providing guidelines for adapting the EMDR protocol to the needs of simple and complex trauma sufferers, the latter of whom may be more optimally treated by targeting dysfunctional core beliefs during the desensitization phase of trauma reprocessing, rather than attempting to establish a reliable timeline or hierarchy of traumatic events. While De Jongh et al. (2010) reinforced the merits of utilizing priming techniques as an adjunct to EMDR, these authors encouraged future research to clarify the potential for EMDR to accomplish all three of the above therapeutic tasks, given that the RDI phase of EMDR contains prominent themes of stabilization and resourcing. Korn (2009) emphasized the preparatory power of the RDI phase of EMDR, with its emphasis on the safe place exercise and the soothing power of positive introjects, and highlighted the contributions of modifications to the EMDR protocol that have enhanced its tolerability, such as the infusion of ego state therapy proposed by Forgash and Copeley (2008). The contributions of Forgash and Copeley (2008) will be described next as part of a narrative synthesis of theoretical data yielded from seven books that were identified as part of the current literature search.

Seven books were identified by the current literature search (Chu, 1998; Courtois & Ford, 2009; Forgash & Copeley, 2008; Kroll, 1993; Rubin & Springer, 2009; Rosenbluth, 1997; and Williams & Sommer, 2002), all of which were obtained and reviewed by this

writer to determine relevance. Kroll (1993), Rosenbluth (1997), Williams and Sommer (2002), and Rubin and Springer (2009) hold minimal relevance to the current investigation due to the absence of an explicit reference to either EMDR or DBT. Kroll (1993) and Rosenbluth (1997) provided practical guidance in the utilization of psychodynamic psychotherapy with the target population, aided by case illustrations and prefaced by a discussion of the diagnostic controversies that have been linked to PTSD and BPD comorbidity, which were summarized previously. It is interesting to note that Rosenbluth (1997) resisted the notion that the optimal treatment of complex trauma necessarily involves abreaction, or the direct processing of traumatic memories, offering his contention that such an approach, in fact, promotes undue regression. Instead, Rosenbluth (1997) endorsed the practice of challenging and confronting present behaviors that reflect past traumas, thus respecting the enduring and residual impact of traumatic memories while avoiding the mistake of imbuing such experiences with excessive power. Williams and Sommer (2002) offered a comprehensive guide for the practitioner who wishes to gain familiarity in the treatment of both simple and complex PTSD with reference to a full range of treatment settings and delivery methods, as well as reference to a multitude of special populations, such as children and veterans. EMDR and DBT are not mentioned by Williams and Sommer (2002), who instead referenced the use of trauma-focused CBT, Video-Assisted Trauma Therapy, Stress Inoculation Therapy (SIT), and Prolonged Exposure (PE) as potential strategies for addressing complex trauma symptomology. Rubin and Springer (2009) failed to meet population specific criteria for relevance, given that this publication offered a detailed protocol for the

implementation of EMDR in the treatment of PTSD with no apparent distinction between simple and complex trauma or reference to BPD comorbidity. Similar to Williams and Sommer (2002), Courtois and Ford (2009) provided a comprehensive analysis of both etiological and treatment formulations pertaining to complex trauma with the addition of an emphasis on a phase oriented approach to the treatment of high acuity trauma sufferers. Courtois and Ford (2009) reaffirmed the efficacy of both DBT as a preparatory intervention and EMDR as a second phase trauma-focused intervention in the absence of any further elaborations regarding the practical implementation or modification of the target interventions.

In contrast, Forgash and Copeley (2008) provided a detailed guide for the integration of ego state therapy and EMDR in the treatment of PTSD and BPD comorbidity, the rationale for which relates to the need for heightened attention to the tasks of enhancing safety and grounding in the present, while overcoming avoidant tendencies. The authors proposed the utilization of various ego-building techniques in the initial stabilization phase, such as the home base exercise, in order to strengthen the ego capacities of the client, thus attenuating the risk of dissociation and severe fragmentation. The home base exercise, which involves the reinforcement of an imaginal safe place, provides a source of intrapsychic refuge for the client and offers a means of retreating from overwhelming thoughts and sensations while remaining anchored in the present. Additionally, Forgash and Copeley (2008) recommended the use of the Orientation to Present Reality (OPR) technique to promote an orientation to the present in the face of disruptions that may result from dissociated ego states, which the authors defined as neural networks

containing aspects of memories, trauma narratives, and physical sensations. Similar to the mindfulness skill in DBT, OPR techniques involve the use of prompts by the therapist that orient the awareness of the client to the current facts and circumstances of their lives, which may be assisted by video or audio depictions of current home or work environments. Forgash and Copeley (2008) reaffirmed the ego supportive nature of the RDI phase of EMDR and made reference to the respect for the integration of past, present, and future realities that exemplifies EMDR and promotes identity consolidation and ego synthesis. Lastly, Chu (1998) lent further support to the notion of privileging ego supportive psychotherapy in the stabilization phase of treatment with clients who present with PTSD and BPD comorbidity. Chu (1998) also endorsed the efficacy of following stabilization with EMDR, although Chu (1998) did not provide an explicit framework for integrating ego supportive strategies within the fabric of EMDR as a dominant modality. Chu (1998) did, however, uphold the processing and integration of trauma memories as critical to the resolution of PTSD symptoms

CHAPTER FIVE
CONCLUSIONS, DISCUSSION, AND SUGGESTIONS FOR FUTURE
RESEARCH

Summary

The vulnerabilities attached to the diagnosis of Borderline Personality Disorder, owing both to environmental and constitutional factors, urge careful evaluation of treatment strategies, with particular attention paid to the additive and confounding influence of comorbid PTSD. The strength of the relationship between Borderline Personality Disorder and PTSD is well documented (Classen et al., 2006; Becker, 2000; Zanarini et al., 1998; Feeny et al., 2002; Brown, 1994; Harned & Linehan, 2008; Basham & Miehl, 2004) and underscores themes of invalidation and victimization that often dominate the landscape of the Borderline patient's life. Treatment strategies that coalesce around the central aim of providing much needed support and validation to individuals with Borderline Personality Disorder, most notably DBT, demonstrate efficacy in the reduction of acute behavioral symptoms (Lynch et al, 2007; Binks et al., 2009; Kliem & Kruger, 2010). However, recent modifications to DBT that incorporate the direct processing of trauma reflect an increased awareness of the potential contributions of targeted trauma resolution to the long-term recovery of comorbid PTSD and BPD clients. In addition to offering a relatively high degree of tolerability (Greenwald, 2007),

EMDR aligns with a neuropsychological understanding of the destabilizing influence of nondeclaratively stored trauma memories (Basham & Miehl, 2004; Bateman & Fonagy, 2004). To the knowledge of this researcher, no other review has sought to determine the relative efficacy of EMDR and DBT in the treatment of individuals diagnosed with comorbid PTSD and BPD. Pertinent findings will be summarized according to study type, beginning with randomized controlled trials.

Three randomized controlled trials, two single group pre post studies, and four case studies were yielded by the current review. Among the randomized controlled trials included in this review, two examined the efficacy of EMDR in treating individuals with Complex PTSD related to childhood abuse. Van der Kolk et al. (2007) provided only moderate support for the efficacy of EMDR in achieving reductions in PTSD symptomology among childhood onset abuse survivors and this study was limited by a short length of treatment, small size of subsample relevant for review, and suboptimal relevance to target population. Edmond et al. (1999) conducted a similar investigation, which was also limited by a short length of treatment and the absence of explicit BPD comorbidity, and found modest support for EMDR in the treatment of adult survivors of childhood abuse, as measured by severity of PTSD symptomology at end of treatment. The final randomized controlled trial included in this study, Harned et al. (2008), demonstrated modest effects for the efficacy of DBT in reducing PTSD symptoms in a population of individuals with BPD and PTSD and identified the addition of an anxiety disorder to BPD pathology as a confound that appears to limit the efficacy of DBT.

Single group pre post designs limit the tenability of causal inferences due to significant threats to internal validity introduced by the absence of a control group; however, the frequent exclusion of the population targeted by the current review from randomized controlled trials urges respect for the potential contributions of quasi-experimental designs. Despite limitations owing to study design, Stiel et al. (2011) and Harned et al. (2012) offered evidence to support the use of modified DBT interventions to treat individuals with Complex PTSD related to childhood sexual abuse, although it should be noted that Harned et al. (2012) demonstrated superior relevance to the target population with a sample comprised of individuals with BPD and PTSD. Stiel et al. (2011) provided a model for infusing elements of trauma-focused, cognitive-behavioral therapy within the structure of DBT to address the confounding influence of PTSD comorbidity on BPD symptomology, an influence that has limited previous DBT outcome studies with this population. Stiel et al. (2011) reported moderate to strong effects for the efficacy of DBT modified with trauma-focused CBT (DBT-PTSD) in a sample of adult survivors of childhood sexual abuse; however, in addition to the limits to internal validity posed by the design of this study, results are further limited by the influence of attrition bias and failure to utilize an intent-to-treat sample. Harned et al. (2012) offered strong support for DBT with modified Prolonged Exposure (DBT-MPE) with a sample of individuals with comorbid BPD and PTSD and intent-to-treat calculations uphold the efficacy of this intervention in reducing PTSD symptoms, as well as suicidal ideation and dissociation.

Despite the fact that the most compelling evidence for therapeutic integration derives from anecdotal case studies with limited generalizability, the argument for flexible, integrative methods certainly aligns with clinical intuition regarding the necessity of tailoring treatment to the unique needs of individual clients. Among the four case studies discovered by the current review, two studies offer strategies for the successful integration of modified Prolonged Exposure and DBT. Harned and Linehan (2008) implemented DBT-MPE in the treatment of two females diagnosed with BPD and PTSD over a 12 month period and reported promising reductions in PTSD symptoms for one of the subjects, with limited efficacy noted for the second subject. Similarly, Becker (2002) conducted DBT-MPE over a ten month period with a female subject presenting with diagnoses of BPD, OCD, and PTSD and reported significant reductions in symptoms of both OCD and PTSD at the conclusion of treatment. The remaining two case studies identified by the current review provided support for the efficacy of EMDR as a unitary approach in the treatment of complex trauma. Korn and Leeds (2002) explored the efficacy of the RDI phase of EMDR in achieving initial stabilization in two subjects presenting with PTSD, depression, and anxiety, both of whom demonstrated significant reductions in PTSD symptoms at the conclusion of six weeks of targeted RDI interventions. Brown and Shapiro (2006) built upon this finding and offered support for the overall efficacy of EMDR in treating symptoms of PTSD in a subject with comorbid BPD and PTSD, as evidenced by clinically significant reductions in global functioning reported at the conclusion of 20 EMDR sessions rendered over a six month period.

Conclusions

The small number of studies identified by the current review and the limited scientific rigor presented by the majority of eligible studies renders the drawing of conclusions implausible. In addition, the complexity of the question under investigation further obscures a unified analysis, given that the studies included in this review present sample populations with mixed diagnostic profiles and varied levels of adherence to targeted treatment interventions, which, in many cases, are represented in modified form. With regard to the fundamental research question guiding this review, the above findings do not appear to support the superiority of either EMDR or DBT in the treatment of comorbid BPD and PTSD; however, a central theme emerges from the above findings. The degree of severity of borderline symptoms in patients with comorbid BPD and PTSD and the extent to which BPD pathology influences overall coping and resiliency holds primary relevance to the current review and, in fact, is explicitly identified by several studies as the dominant consideration in establishing optimal treatment interventions for comorbid PTSD and BPD patients. The primary relevance of this theme extends to research lacking in an explicit reference to comorbid BPD or Complex PTSD, as many of such investigations focus discussion on the “tolerability” of trauma-focused interventions and, in some cases, hypothesize about the confounding influence of Axis II pathology on treatment outcomes. It is interesting to note that the outcomes reported for both Van der Kolk et al. (2007) and Harned et al. (2008) appear limited by a privileging of either BPD or PTSD in the selection of target interventions, with both authors alluding to the potentially confounding influence of the undertreated and comorbid diagnosis on overall

outcomes. In other words, treatment of BPD without attention paid to the influence of PTSD symptoms and vice versa may inhibit optimal recovery. The degree to which EMDR and DBT offer a focus broad enough to address the dual needs of the target population remains difficult to determine; however, EMDR reinforced with a robust and targeted RDI phase and DBT modified with trauma-focused CBT and Prolonged Exposure show promise in the effective treatment of this population. Finally, the present study holds particular relevance to the field of social work, given the social justice implications that accompany the enterprise of therapy with comorbid BPD and PTSD clients. The palpable and often reflexive recoiling that pervades social responses to “Borderline” individuals in both professional and personal spheres lends a sense of urgency to the need for sensitive and ethically informed practice with this population. Morales and Sheafor (1998) identify the cultivation and provision of humane and high quality care to the most vulnerable members of our society as a central mission of social work. This study offers a context for the fulfillment of this mission. As the above findings poignantly illustrate, opportunities for advancement toward the goal of achieving both humane and clinically optimal treatment for persons with comorbid BPD and PTSD are vast and supremely suited to the social work profession.

Discussion

The above findings are limited by several factors, the most notable of which relates to the overall dearth of studies that investigate optimal treatment interventions for individuals with comorbid PTSD and BPD, a gap in the literature that has been resoundingly identified by numerous authors (Harned & Linehan, 2008; Korn, 2009; De

Jongh et al., 2010; Vignarajah & Links, 2009; Ford et al., 2005). The narrow scope and limited methodological rigor of studies eligible for the current review amplify the need for further research. In an effort to limit the potentially obscuring influence of a diffuse and scarcely defined research question, Gibbs (2003) emphasized the importance of composing a COPES question with the following four elements in order to establish a solid basis for systematic review: client type; specific client characteristics and parameters; course of action or intervention; alternate course of action or intervention; and intended result. The current review adheres to the COPES formula for developing research questions forwarded by Gibbs (2003) in its specification of EMDR and DBT as a basis for practical comparison. While this formula minimizes the risks associated with overly broad parameters, the restriction of target interventions to EMDR and DBT to the exclusion of alternative strategies presents a potential limitation to this study. The diagnostic controversies that surround both BPD and PTSD, which were detailed previously, highlight the cultural and political motivations that often imbue socially constructed labels, thus introducing limits to the validity of any study that relies upon formal diagnostic criteria in the drawing of its parameters. Determining the optimal nature and scope of trauma reprocessing with comorbid PTSD and BPD individuals emerges as a source of polarity within the literature and will be discussed next.

The caution of Rosenbluth (1997), who associated the direct processing of traumatic memories with the potential for undue regression, looms large, especially when one considers the high level of acuity associated with the diagnostic criteria for BPD. One might argue that the formal criteria for a diagnosis of Borderline Personality Disorder

contained within the *DSM-IV* excludes the possibility of a “mild” sub-group of borderline patients, given the prominence of self-endangering, behavioral markers and high intensity thought and identity disturbances. While Ford et al. (2005) endorsed a phase-oriented approach to the treatment of complex trauma that involves the direct processing of traumatic memories during the second phase, the authors also reflected the theorizing of Rosenbluth (1997) in their support for a “present-centered” approach to trauma processing that focuses on the recognition of trauma imprints on current functioning, in the absence of direct reprocessing. Despite the potential for harm engendered by trauma-focused work, the long-term benefits of such interventions, both for low and high acuity clients, have been demonstrated by formal investigation (Harned & Linehan, 2008; Brown and Shapiro, 2006; Becker, 2002; Harned et al., 2012) and reinforced by numerous theorists (Korn, 2009; Forgash & Copeley, 2008; Basham & Miehl, 2004; De Jongh et al., 2010; Courtois and Ford, 2009; Herman, 1992). The need for adequate preparation to increase the tolerability of trauma-focused interventions has given rise to mounting theoretical support for the merits of adopting a phase-oriented approach to the treatment of severely comorbid individuals.

Ford et al. (2005) are careful to point out that no scientific evidence exists to support the espousal of a phase-oriented approach in the treatment of comorbid PTSD and BPD. However, the logic of utilizing “priming” techniques to increase the palatability of trauma-focused interventions with this population resonates with clinical intuition regarding the avoidant and dissociative tendencies of traumatized individuals, who may require preparatory work. Despite a lack of randomized controlled trials that examine the

efficacy of phase-oriented treatment models with the target population, several studies yielded by the current review offer support for the efficacy of therapeutic integration (Harned et al., 2012; Becker, 2002; Harned & Linehan, 2008). Becker (2002) outlined several competing strategies to address the needs of comorbid patients, including the sequential administration of multiple techniques, the enlistment of multiple therapists, and the blending of concurrently rendered treatment interventions, the former of which earned appraisal from the author as the strategy most associated with continuity and symptom relief. Some authors argue that the past, present, and future orientation of EMDR holds the potential to achieve initial stabilization, trauma reprocessing, and enhanced mastery and role fulfillment, given the rehearsal of effective coping in hypothetically derived, future scenarios that follows successful reprocessing (De Jongh et al., 2010; Korn & Leeds, 2002; Brown & Shapiro, 2006). Some authors upheld the broad-based appeal of EMDR as a dominant strategy in the treatment of PTSD and BPD, while providing guidelines for the insulation of EMDR with ego state therapy techniques, thus reinforcing the tendency toward integration that pervades the literature on treatment for the target population (Forgash & Copeley, 2008; Chu, 1998). The current state of scientific research pertinent to the current research question does not permit any definitive conclusions but does provide ample directions for future research.

Suggestions for Future Research

Future research is much needed to clarify, most centrally, the importance of direct trauma reprocessing to the optimal recovery of individuals with comorbid PTSD and BPD and to explore clinical factors that may indicate a preference for the adoption of a

“present-centered” focus, rather than a direct immersion approach in the processing of trauma memories. To date, DBT outcome studies that target PTSD symptoms appear limited by the absence of modifications aimed at facilitating the processing of traumatic memories. Further research is needed to clarify the impact of PTSD comorbidity on outcomes for singularly focused interventions, such as DBT, that are tailored to the specific needs of clients with Borderline pathology. Similarly, future PTSD outcome studies would benefit from an explicit examination of complex trauma and BPD comorbidity as potential variables, rather than resorting to post hoc speculations about the influence of complex symptomology on inhibited treatment outcomes. As noted by Ford et al. (2005), scientific research is needed to explore the merits of a phase-oriented approach in the treatment of complex trauma, given the prominent influence and broad acceptance of this tenant within the conceptually based literature. Additionally, research is needed to assist in the clarification of *when* and *how* to integrate trauma-focused interventions within a phase-oriented modality. Harned et al. (2012) provided objective guidelines for assessing readiness for trauma-focused work and Harned and Linehan (2008) offered a template for introducing Prolonged Exposure into the structure of DBT that may guide future investigations. The importance of introducing some measure of objectivity into clinical decisions pertaining to the treatment of this challenging client population cannot be overstated. While the cultivation of empirical data remains a priority, the potential contributions of qualitative literature in this regard should not be overlooked. Future studies may build upon the current investigation by seeking qualitative data from clients with complex trauma who have participated in phase-

oriented treatment modalities, such as DBT-PTSD, to determine what factors may or may not contribute to the tolerability and overall efficacy of these interventions. Further research is also needed to clarify the potential for EMDR to adequately address the dual needs of comorbid PTSD and BPD clients and to explore the efficacy of recently developed modifications to DBT, such as DBT-PTSD and DBT-MPE, in the treatment of this client base. Given the weight of evidence in support of a relationship between PTSD and BPD, the scarcity of research pertaining directly to the treatment of this population constitutes a lamentable omission. As the current review illustrates, the potential costs of such an omission are great, as the healing of some of our most deeply wounded patients stands to benefit.

APPENDIX A
SCREENING AND DATA EXTRACTION FORM

The following screening form is modeled after screening forms utilized by Littell, Campbell, Green, & Toews (2007).

Level 1: Initial Screening

1. Is this paper about the treatment of individuals with complex psychopathology related to chronic trauma histories?

- Yes
- No
- Can't tell

2. What is this?

- Randomized-Controlled Trial
- Systematic Review
- Meta-Analysis
- Single group pre-post test design
- Single subject experimental design
- Descriptive, correlational, or case study

Level 2: Eligibility Decisions

1. Does this paper compare the interventions of Eye-Movement Desensitization Reprocessing (EMDR) and Dialectical Behavior Therapy (DBT) in a sample population of persons with comorbid PTSD and BPD?

- Yes
- No
- Cant' tell

2. Does this paper compare the interventions of EMDR and DBT in a sample population of persons with BPD alone?

- Yes
- No
- Can't tell

3. Does this paper compare EMDR and DBT in a sample population of persons with "Complex PTSD"?

- Yes
- No

Can't tell

4. Does this study relate to the utilization of either EMDR or DBT in the absence of a direct comparison to one another in a sample population of persons with comorbid PTSD and BPD?

Yes

No

Can't tell

5. Does this study relate to the utilization of either EMDR or DBT in the absence of a direct comparison to one another in a sample of persons with BPD alone?

Yes

No

Can't tell

6. Does this study relate to the utilization of either EMDR or DBT in the absence of a direct comparison to one another in a sample population of persons with "Complex PTSD"?

Yes

No

Can't tell

Level 3: Data Extraction: Study Level

Research Methods

1. How is the sample population grouped?

Comparison and control groups

Single group

Single subject

Case study

Other (specify)

2. How were groups formed?

Random assignment

Convenience/haphazard/accidental

Snowball technique

Single subject/case study

3. If random assignment, specify design
- Simple/systematic
 - Stratified/blocked
 - Yoked pairs (created by timing of enrollment into the study)
 - Matched pairs
 - Cluster randomized
 - Other
 - Can't tell
4. Who performed group assignment
- Research staff
 - Other (please specify)
5. If random assignment, how was it performed?
- Computer generated
 - Random numbers table
 - Coins or dice
 - Other (describe)
 - Can't tell
6. How many separate sites were included in the study?
- One
 - Two
 - Three
 - Four
 - Five or more
7. If random, was random assignment performed in the same way in all sites?
- Yes
 - No
 - Can't tell
8. How many intervention groups were there?
- One
 - Two
 - Three

9. How many intervention groups are relevant for this review?

One

More than one (explain)

10. How many different control/comparison groups were there? (groups that received different treatments, not counting multiple sites)

One

Two or more

11. How many control/comparison groups are relevant for this review?

One

More than one

Settings

12. Location of intervention (check all that apply)

Mental health agency

Acute care hospital

Private practice setting

Can't tell

Other

12. Location details (city, state, country)

13. Sample size

Number of cases	EMDR	DBT	Alternative trauma-focused tx	Alternative supportive psychotherapy	Control	Total	Pg# & Notes
Referred to study							
Consented							
Randomly assigned							
Nonprobability sampling method							
Started treatment							
Completed treatment							
Completed post-tx data							
Completed follow-up							

14. Sample characteristics

	EMDR	DBT	Alternative trauma-focused tx	Alternative supportive psychotherapy	Control	Total	Pg# & Notes
Gender							
Age							
Race/ethnicity							
Socioeconomic status							
Diagnosed with PTSD and BPD							
Diagnosed with BPD							
Diagnosed with Complex PTSD							
Pharmacological treatment							
Other sample characteristics							

15. Were there any differences between treatment and control groups at baseline?

Yes (describe differences)

No (How do we know?)

Can't tell

16. Was there any analysis of differences between treatment completers and dropouts?

Yes

No

___ Can't tell

17. What were the differences between treatment completers and dropouts?

18. Was there any analysis of differences between completers and dropouts in the control group?

19. What were the differences between completers and drop-outs in the control group?

20. EMDR/trauma-focused intervention characteristics

	Min	Max	Mean	SD	Pg# & Notes
Duration in ___Days ___Weeks ___Months					
Hours of contact ___Per week ___Per month ___Other (Explain)					
Total hours of contact					

21. DBT/Supportive Psychotherapy intervention characteristics

	Min	Max	Mean	SD	Pg# & Notes
Duration in ___ Days ___ Weeks ___ Months					
Hours of contact ___ Per week ___ Per month ___ Other (Explain)					
Total hours of contact					

22. Other characteristics of EMDR/trauma-focused treatment interventions

23. Other characteristics of DBT/Supportive Psychotherapy treatment interventions

24. Characteristics of clinicians rendering treatment (Education, demographics, etc.)

25. Describe methods used to promote quality/purity of treatment interventions (supervision, training, consultation)

26. Is there any information on adherence (fidelity) to treatment intervention?

Yes (describe)

No

Not sure

27. Were standardized outcome measures (scales) use/reported?

Used and reported (give results)

Used but not reported

Can't tell

Not used

28. Were there any implementation differences between sites?

Yes (describe differences)

No (how do we know?)

Can't tell

29. Is information on costs of treatment services provided?

Cost per case

Total cost

No info

Services provided to control cases

30. Type of control group

Usual services (treatment as usual)

Alternative services (describe)

No service

31. Describe services provided with control group

32. Characteristics of clinicians who provided services to control cases (education, demographics, etc.)

Level 4: Outcome measures

1. When were data collected?

Baseline

Post-tx

1st follow-up (when?)

2nd follow-up (when?)

3rd follow-up (when?)

4th follow-up (when?)

5th follow-up (when?)

Other

2. Who conducted interviews?

Research staff

Clinicians

Both

No interviews

3. Were data collected in the same manner for tx and control groups?

Yes

No (what were the differences?)

Can't tell

Outcome measures

#	Topic	Reliability and Validity	Format	Direction	Source	Mode Admin	Blind?	Pg# & Notes
1	Code: Definiton:	Info from: ___ Other samples ___ This sample ___ Unclear Info provided:	___ Dichotomy ___ Continuous	High score or event is ___ (+) ___ (-) ___ Can't tell	___ Research subject ___ Clinician ___ Researcher	___ Self-admin ___ Clinician ___ Researcher	___ Yes ___ No ___ Can't tell	

Topic codes: Overall functioning (IASC scale), Level of Depressive symptoms (Beck Depression Inventory), PTSD symptoms (SUDS scale), presence/frequency of self-injurious behaviors, presence/frequency of inpatient admissions, Other

Note: row repeats as often as necessary to code all measures

Outcome data

Please enter outcome data in the tables provided below. Enter dichotomous data first, then continuous outcomes. Outcome # refers to the measures described above.

Dichotomous outcome data

Enter data only if is provided (do not perform calculations). OR=odds ratio. Enter exact p-value if available. If covariates (control variables) are used in the analysis, please identify these variables under Statistics (cov). **EMDR includes alternative trauma-focused interventions and DBT includes alternative supportive psychotherapies.**

Outc#	Timing	Source	Valid Ns- EMDR	Valid Ns- DBT	n w- event- EMDR	N w/even t-DBT	% w/event- EMDR	% w/event- DBT	Statistics	Pg & Notes
	__Post tx	__Research subject	EMDR:	DBT:	EMDR :	DBT:	EMDR:	DBT:	OR 95% CI	
	__1 st f-u	__Clinician							Chi2	
	__2 nd f-u	__Researcher							Df p-val	
	__3 rd f-u	__Other							Other	
	__4 th f-u		Con.:	Con.:	Con:	Con.:	Con.:	Con.:		
	__5 th f-u								Cov	

Continuous outcome data

If change/gain scores are provided, enter under other data. If covariates (control variables) are used in the analysis, please identify these variables under Statistics (cov.). As above, EMDR includes alternative trauma-focused interventions and DBT includes alternative supportive interventions.

Outc#	Timing	Source	Valid Ns- EMDR	Valid Ns- DBT	Means- EMDR	Means -DBT	SDs- EMDR	SDs- DBT	Statisti cs	Pg# & Notes
	__Post tx	__Research subject	EMDR:	DBT:	EMDR:	DBT:	EMDR:	DBT:	P	
	__1 st f-u								T	
	__2 nd f-u	__Clinician							F	
	__3 rd f-u	__Researcher							Df	
	__4 th f-u								ES	
	__5 th f-u		Con.:	Con.:	Con.:	Con.:	Con.:	Con.:	Other	
	__Other								Cov	

Level 5: Study quality standards

1. **Random generation of allocation** (assignment) to groups (explicitly stated use of either computer-generated random numbers, table of random numbers, drawing lots or envelopes, coin tossing, shuffling cards, or throwing dice)

- Met
 Unclear
 Unmet

2. **Allocation concealment** (participants and investigators cannot foresee assignment; e.g., central randomization performed at site remote from trial location or monitored use of sequentially numbered, sealed, opaque envelopes)

- Met
 Unclear
 Unmet

3. Avoidance of **performance bias** (no treatment differences between groups other than the main intervention contrasts)

- Met
 Unclear
 Unmet

4. Avoidance of **attrition bias** (losses to follow-up less than or equal to 20% and equality distributed between comparison groups)

- Met for all outcomes
 Met for some outcomes
 Unclear
 Unmet

5. Avoidance of **detection bias** (assessor unaware of the assigned treatment when collecting outcome measures)

- Met for all outcomes
 Met for some outcomes
 Unclear
 Unmet

6. **Intention-to-treat** (data analyzed according to assigned group whether or not assigned services were received/completed)

- Met for all outcomes
 Met for some outcomes

Unclear

Unmet

7. **Standardized observation periods** (follow-up data were collected from each case at a fixed point in time after random assignment)

Met for all outcomes

Met for some outcomes

Unclear

Unmet

8. **Validated outcome measures** (use of instruments with demonstrated reliability and validity in this sample or similar samples OR use of public agency administrative data, behavioral, or biologic measures)

Met for all outcomes

Met for some outcomes

Unclear

Unmet

9. **Conflicts of interest** (researchers or data collectors would benefit if results favored treatment OR the control group)

Clear conflict of interest (explain)

Possible conflict of interest (explain)

Conflict of interest is unlikely (explain)

Unclear

10. **Allegiance bias:** Is there any indication that researchers believed that treatment intervention under investigation was better/worse than the alternative before the study began?

yes

No

Can't tell

11. **Comments:**

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VITA

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