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Importance of Childhood Maltreatment on Borderline Personality in Adults: Meta-analysis

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Abstract

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MS, Walden University, 2017

MA, University of Massachusetts, 2009

MSW, Ohio State University, 2004

BS, Brooklyn College, 1999

Dissertation Submitted in Fulfillment

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Abstract

Early childhood maltreatment (CM) is a risk factor for later psychopathology specifically Borderline Personality Disorder (BPD). CM has been found to negatively affect social, emotional, and psychological development as well as the ability to foster and sustain interpersonal relationships throughout all stages of life. There are evidence-based interventions for different kinds of CM including Trauma-Focused Cognitive-Behavior Therapy (TF-CBT), Alternatives for Families - Cognitive Behavioral Therapy (AF-CBT), relaxation training, and social skills training. The current study is a meta-analysis of published research into CM as it contributes to BPD in adults and is designed to examine the effect size of childhood maltreatment as it contributes to adults diagnosed with BPD. Glaser's theory of emotional abuse and neglect and Linehan's theory of etiology of impulsivity form the theoretical framework for understanding the definition and recognition of emotional abuse and neglect, and the etiology of impulsivity in the developmental path leading to BPD, respectively. A widespread literature search strategy and coding plan for studies was developed, and utilizing Comprehensive Meta-Analysis, version 3 software assisted in managing the data from the studies, calculating effect sizes, and heterogeneity of studies in the sample. The overall correlation between CM and BPD is positive and medium range with an effect size of 0.34, meaning that all studies with presence or absence of CM and BPD reported a significant association. Outcomes from this study may play a role in positive social change by identifying how each form of CM contributes to BPD may improve the effectiveness of mental health treatment for children by focusing on which form of childhood abuse should be treated first and foremost. Future research needs were identified based upon the results of the meta-analysis.

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Dedication

This dissertation is lovingly dedicated to my father, Anthony Trentacosti, who has been a role model for me since I was a little girl. He is a kind, loving, and respectful person always helping people whenever possible. His compassion and thoughtfulness towards others showed me how to be a genuinely considerate person. It also led me to dedicate my career to working with people in a therapeutic manner. I have learned so much from my conversations with him and I'm grateful for those. He always believed I could be the best at anything and everything I put my mind to, and he was right. He instilled in me a good work ethic and was extremely supportive, which I am eternally grateful for. He taught me to be strong, kind, and independent. His wisdom, guidance, and motivation were extremely valuable and deeply appreciated, especially when I thought I could not finish this journey. He has always been a rock that I could lean on in every aspect of my life. His consistent support and love have been a huge factor in my accomplishments. I can't wait to share this moment with him when I walk across that stage and receive my doctorate. I hope that that these words encourage others to recognize the importance of family and the love and support they provide.

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Chapter 1: Introduction to the Study

Introduction

Childhood trauma is very common in subjects with Borderline Personality Disorder (BPD) and is considered to be the main environmental element in BPD development (Martín-Blanco et al., 2014). BPD is a severe form of psychopathology depicted by instability of affect, self-harm, impulsivity, identity disturbance and chaotic interpersonal relationships (Tomko, Trull, Wood, & Sher, 2014). Approximately 2.7% of the U.S. population meets criteria for BPD, with somewhat higher rates of the disorder in females being more prevalent among women between the ages of 30 and 44 than among men in that age range; people with a family income less than $20,000 per year; individuals younger than 30, and people who are separated, divorced, or widowed. Tomko et al. (2014) identified racial/ethnic differences in BPD with Native Americans and Blacks describing elevated rates of the disorder compared to Whites or Hispanics, and Asian Americans having a substantially lower rate. Chanen and Kaess (2012) expressed that there are compelling links between BPD and adverse childhood experiences that have been found in clinical and nationally representative samples of adults. Recorded childhood maltreatment, including childhood physical abuse, sexual abuse, and neglect, was specifically related to an elevated risk of BPD symptom levels during early adulthood after other types of childhood maltreatment were controlled statistically (Chanen & Kaess, 2012).

Child abuse has been connected as a risk factor for BPD, with childhood sexual abuse being studied the most (Paris, 2009), and physical abuse or neglect researched the least (Allen, Cramer, Harris, & Rufino, 2013; Zanarini et al., 2002). Children who

experience maltreatment usually suffer multiple forms of abuse or neglect (Harvey & Taylor, 2010). There are evidence-based interventions for different kinds of child maltreatment; however, the most important form of child maltreatment to treat first has not been established. Meta-analysis is a method of quantifying the practical significance of a particular treatment through the comparison of magnitudes of effects across multiple studies (Ellis, 2010). This study aimed to assess the relative importance of risk factors that are associated with the development of BPD. The outcome of this study had positive social implications in that identifying how each form of childhood maltreatment contributes to BPD may improve the effectiveness of mental health treatment for children by focusing on which form of childhood abuse should be treated first and foremost.

This chapter also consisted of explaining the context of this study through a brief examination of the background for identifying the relative importance of all forms of childhood maltreatment as it relates to BPD in adults, the problem statement and purpose of the study, the research question, and the theoretical foundation for comprehending childhood abuse and neglect and BPD. The basis for choosing a meta-analytical research design was discussed, as well as relevant childhood maltreatment and BPD definitions, assumptions, scope and delimitations, limitations, and, lastly, the prospective significance of the study.

Background

A link has been identified between childhood emotional abuse, childhood physical abuse, childhood sexual abuse, childhood neglect and BPD. Research by Elices et al. (2015) explored the relationship between childhood trauma, temperamental traits and mindfulness in BPD. Martín-Blanco et al. (2014) found a correlation between

temperamental traits and a history of childhood emotional abuse that was associated with the development and severity of BPD. It was discovered by Cohen et al. (2014) that physical abuse was independently and positively linked with narcissistic and paranoid traits and negatively linked with Cluster C traits. The authors expressed that these findings could assist in comprehending adult personality pathology and encourage developing the clinical tools necessary for survivors of childhood abuse/neglect. Numerous forms of interventions have been identified for the various types of childhood maltreatment and there is evidence that multiple factors might determine treatment outcome, and that therapy techniques might be more successful when tailored to the individual needs of the child or young person, taking into account their specific symptoms, development, context, and background (Harvey & Taylor, 2010).

Problem Statement

Although the correlation between childhood maltreatment and BPD has been studied for decades, the relative importance of each form of childhood abuse on BPD in adults has not. This research focused on various forms of childhood maltreatment and the importance of each one that is associated with the development of BPD in adults. Incorporating a systemic review of the literature does this as well as a meta-analysis of peer reviewed articles and studies.

Purpose

Childhood maltreatment includes sexual abuse, physical abuse, emotional abuse, and neglect. Child sexual abuse is a form of child abuse that includes sexual activity with a minor (Wissink, Van Vugt, Moonen, Stams, & Hendriks, 2015). There are numerous forms of child sexual abuse, including but not limited to rape, fondling, sexual assault,

exposure, voyeurism, and the commercial sexual exploitation of children. Child physical abuse is defined as purposefully hurting a child causing injuries such as bruises, broken bones, burns, and cuts (Norman et al., 2012). The definition of childhood emotional abuse is described as emotional maltreatment or emotional neglect of a child and can involve intentionally trying to scare, humiliate, isolate or ignore a child (Slep, Heyman, & Snarr, 2011). Child neglect is explained as a lack of meeting a child's basic needs, including the failure to provide adequate health care, supervision, clothing, nutrition, housing as well as their physical, emotional, social, educational and safety needs according to the U.S. Department of Health and Human Services (2007). The purpose of the quantitative study, specifically a meta-analysis, was to analyze the comparative significance of each form of childhood maltreatment as it contributes to BPD to distinguish necessary intervention strategies for specific forms of childhood abuse/neglect and which should be treated first when children are exposed to more than one form.

Research Question

What is the effect size of childhood maltreatment as it contributes to adults diagnosed with BPD?

Theoretical Foundation for the Study

Roberts (2010) stated that a conceptual framework explains the key factors to be studied and the postulated correlations between them. Two theories offer a foundation for understanding childhood maltreatment and BPD, which form the rationale for the literature review and research question. First is Glaser's (2011) definition and recognition of emotional abuse and neglect. There are five categories within the

definition of emotional abuse and neglect. The first one is emotional unavailability, unresponsiveness, and neglect, which include parental insensitivity, the inability to respond to the child's emotional needs, and having no alternative plan to provide for the child emotionally. The second grouping is negative attributions and misattributions to the child whereas the parent exhibits hostility, blame, denigration, rejection, or scapegoating towards the child. This interaction is frequently based on the belief that the child deserves this response due to basic negative attributions to the child (Glaser, 2011). Some children start to believe in and act out the negative attributions ascribed to them. The third type is developmentally inappropriate or inconsistent interactions with the child. This consists of expectations outside or below the child's developmental capacity; harsh and inconsistent discipline; and experiencing confusing or traumatic events and interactions, such as domestic violence as explained by Glaser (2011). The fourth category is failure to recognize or acknowledge the child's individuality and psychological boundary. The author described how parents are incapable of differentiating between the child's reality and the adult's belief & wishes. The last grouping is failing to promote the child's social adaptation. This is explained as failure to foster the child's socialization within the child's context, by isolating the child or by failing to provide adequate stimulation and opportunities for learning. This conceptual framework is relevant to the topic of study because it explains how specific childhood experiences such as these could shape a child as they age into adulthood potentially leading to BPD.

The second theory for this study is Linehan's (1993) theory, which assesses the etiology of impulsivity, independent of emotion dysregulation, in the developmental path leading to BPD. Individuals with BPD have (a) heightened emotional sensitivity, (b)

inability to regulate intense emotional responses, and (c) slow return to emotional baseline. Shared interactions between predisposing biological vulnerabilities and environmental risk factors shape the development of BPD among vulnerable individuals, such as impulsive and emotionally sensitive children who are placed in high-risk environments (Crowell, Beauchaine, & Linehan, 2009). These children could experience substantial trouble inhibiting extreme emotions in an invalidating context by family members, inconsistent use of punishment, and escalation of anger during interactions. This teaches the child that exhibiting emotions is unwarranted and should be coped with internally and without parental support (Linehan, 1993). Subsequently, the child does not learn how to understand, label, regulate, or tolerate emotional responses but rather learns to waver between emotional inhibition and extreme emotional lability, and does not learn how to solve the problems contributing to these emotional reactions. Crowell et al. (2009) explained that the development of extreme emotional lability characteristic of BPD is shaped and maintained by the caregiving environment and is based on characteristics of the child (e.g., baseline emotional sensitivity) and the developmental context. It was also illustrated that by mid- to late adolescence there is a pattern of distinguishable characteristics and maladaptive coping strategies that signify heightened risk for later BPD, whereas these traits and behaviors could intensify risk for BPD across development. This theory is relevant to the topic of study because it explained how specific events and incidents during childhood and adolescence could increase the risk for BPD potentially developing in adulthood if not properly remedied.

Nature of Study

The nature of this study is a quantitative approach, which summarizes quantitative

evidence from several research studies. Creswell (2014) explained this approach as identifying variables, suggesting relationships among them, and controlling the research setting. This study is a meta-analysis of the current research available in the significance of each form of childhood maltreatment as it contributes to BPD in adults. Several dependent variables are taken from various pertinent studies, which include all forms of childhood maltreatment (i.e., sexual abuse, physical abuse, emotional abuse and neglect). The studies are chosen from research article databases available online such as EBSCO database, PsychINFO, PsycARTICLES, and ProQuest. The search includes articles on BPD, all forms of childhood maltreatment, treatment for childhood maltreatment, and treatment for BPD from 2000 to present. The selected studies identify all forms of childhood maltreatment as it relates to BPD in adulthood, treatment for childhood maltreatment in childhood, and treatment for BPD in adulthood. Relevant keywords that are used in the search include "childhood maltreatment," "borderline personality disorder (BPD)," "childhood sexual abuse," "childhood physical abuse," "childhood neglect," "childhood emotional abuse," "childhood maltreatment treatment," "BPD symptoms," and "BPD treatment." The selected studies used in the meta-analysis have been peer-reviewed, and to guarantee statistical significance, several studies are chosen for the analysis of each part of the meta-analysis. Effects sizes are determined by statistical calculation of Fisher's Z (Borenstein, Hedges, & Rothstein, 2007) using Comprehensive Meta-Analysis, version 3 (CMA, v3) (Borenstein, Hedges, Higgins, & Rothstein, n.d.). Information obtained from individual studies are utilized according to the mandated requirements of the statistical formula. Single-subject design studies, review articles, studies relating to BPD in children, duplicate studies or dissertation studies also

published in another format, and qualitative studies, are excluded.

Definition of Terms

Borderline Personality Disorder (BPD): A severe form of psychopathology depicted by instability of affect, self-harm, impulsivity, identity disturbance and chaotic interpersonal relationships (Tomko, Trull, Wood, & Sher, 2014).

Childhood maltreatment: Any act or series of acts of commission or omission by a parent or other caregiver (e.g., clergy, coach, teacher) that results in harm, potential for harm, or threat of harm to a child (Wissink, Van Vugt, Moonen, Stams, & Hendriks, 2015).

Child sexual abuse: A form of child abuse that includes sexual activity with a minor, including but not limited to rape, fondling, sexual assault, exposure, voyeurism, and the commercial sexual exploitation of children (Norman et al., 2012).

Child physical abuse: Purposefully hurting a child causing injuries such as bruises, broken bones, burns, and cuts (Norman et al., 2012).

Child emotional abuse: This is described as emotional maltreatment or emotional neglect of a child and can involve intentionally trying to scare, humiliate, isolate or ignore a child (Slep, Heyman, & Snarr, 2011).

Child neglect: The lack of meeting a child's basic needs, including the failure to provide adequate health care, supervision, clothing, nutrition, housing as well as their physical, emotional, social, educational and safety needs (U.S. Department of Health and Human Services, 2007).

Effect size: The magnitude of change as a result of an intervention. For the purposes of this study, effect sizes are computed using Comprehensive Meta-Analysis, Version 3,

which is a calculation based upon random effects models that allow the true effect size to vary across studies (Borenstein, et al., n.d.).

Mental health treatment: Therapeutic work conducted by a trained clinician, designed to ameliorate psychological distress such as subjective feelings of depression or anxiety and/or improve psychological functioning (affect, functional behaviors, attachment, reality testing).

Meta-analysis: A quantitative method for synthesizing research results that incorporates the computation of individual effect sizes for each study as well as an overall mean effect size for related studies, chosen for analysis based on some common intended effect (Card, 2012).

Assumptions

One assumption underlying this study is that all forms of childhood maltreatment, interventions for childhood maltreatment and BPD treatments being described were actually applied, and that the measures utilized in the multiple individual research studies were valid and reliable. One of the compulsory assumptions of a meta-analysis is that effect sizes can be deemed justifiable based upon reported outcome measures (means, standard deviations, and sample sizes for each group). However, there are always possible weaknesses in applied clinical psychology research related to the utilization of self-report measures and potential lack of treatment dependability. These complexities are assessed as part of the qualitative rating of each study in the meta-analysis; hence any outcomes extracted considered the potential flaws of the original research.

Scope and Delimitations

The scope of the study includes examining published childhood maltreatment research and BPD research with adult participants that is quantitative and includes data that was used to compute effect sizes, using various forms of childhood maltreatment dependent variables such as sexual abuse, physical abuse, emotional abuse and neglect. Single-subject design studies, review articles, studies relating to BPD in children, duplicate studies or dissertation studies also published in another format, and qualitative studies, are excluded.

Limitations

The limitations to consider in the study include the fact that this is a meta-analysis so the data collection is based solely on the thoroughness of the literature search and coding strategies. Since there is only one researcher, there is a possibility that the sampling method chosen might not be as comprehensive as other researchers may be. The generalization of the findings are limited specifically to BPD in adults and the various forms of and treatment of childhood maltreatment.

Significance

BPD affects the lives of the individuals with this diagnosis, their families, their communities, and their relationships (American Psychiatric Association (APA), 2013; Gunderson, 2009). A person with BPD has impairments in self-functioning, which includes an unclear sense of self (aka identity diffusion), excessive self-criticism, insecurity, chronic feelings of emptiness and worthlessness, and instability in goals, jobs, values, and friendships. This could lead to inexplicable anger, impulsivity, mood swings, and love-hate relationships with others both at home and at work. One moment a person

is idealized and the next moment there is a dramatic shift to devaluing due to perceived slights or minor misunderstandings. Intimate relationships include accusations and anger, jealousy, bullying, control and breakups due to the insecurity of the person with BPD and their negative feelings get projected onto their significant other causing them to be vindictive and mean with their words while moods shift often and quickly (APA, 2013; Gunderson, 2009). Individuals with BPD are desperate to be loved and cared for but are hyper vigilant for any real or imagined signs of abandonment or rejection. Trust is always an issue frequently leading to distortions of reality and paranoia, and the other person is viewed as for or against them and must take their side (APA, 2013). They react to their overwhelming fears of abandonment with needy and clingy behavior or anger and rage that manifest their own distorted reality and self-image as explained by the APA (2013).

Chanen and Kaess (2012) reported that low family socioeconomic status, family welfare support, single-parent family, paternal sociopathology, and parental illness and parental death were all independently related to BPD symptoms in young adults. The risk of developing BPD increased as the number of problematic parenting behaviors increased such as aversive parental behavior and low parental affection or nurturing during the childrearing years. Experiences of childhood abuse or neglect, problematic family environment, as well as low socioeconomic status are significant risk factors for the development of BPD. A range of childhood and parental demographic characteristics, adverse childhood experiences, early relational difficulties, and forms of maladaptive parenting has been identified as risk factors for adolescent and adult BPD. According to Tomko et al. (2014), approximately 3% of adults meet criteria for a lifetime BPD diagnosis. Individuals with BPD are highly likely to seek mental health services, with

74.9% presenting to a physician, therapist, counselor, or other mental health professional for diagnosable mental health concerns, and 63.1% being prescribed medication. This prevalence rate reinforces the viewpoint that BPD is a major public health problem and necessitates more attention as a target of both prevention and treatment. This study would identify the relative importance of each form of childhood maltreatment associated with BPD to determine which kind of maltreatment should be treated first. If identified early on, this would ideally reduce the BPD symptoms from developing within childhood that eventually leads to BPD in adulthood. It could lead to ensuring children get the most appropriate therapeutic treatment early on in childhood to decrease the possibility of developing adult pathology. This research could also benefit adults by identifying elements and underlying issues that led to the development of BPD. Additionally, it could educate adults diagnosed with BPD on the behaviors, stressors, and risk factors that led to BPD so they will not repeat the cycle with their own children. Constantino (2016) expressed that there are strengths and weaknesses of different types of interventions and identifying gaps in knowledge could lead to the development of improved programs.

Summary

Child abuse and neglect has been linked as a risk factor for BPD. Although the association between the two has been studied for years, the relative importance of each form of CM as it contributes to BPD in adults has not been studied. Numerous treatments have been used to treat both child abuse and neglect trauma and BPD. However, if it can be determined which kind of CM to treat first, it could lead to guaranteeing children receive the appropriate therapeutic intervention early on in childhood to reduce the possibility of developing BPD in adulthood. The meta-analysis of CM as it influences

BPD in adults consists of quantitative studies with adult participants where the dependent variables are any form of CM. In Chapter 2, the body of literature representing the various forms of CM, treatment for CM, BPD and BPD treatments are discussed in the context of the impact of CM and the prevalence of BPD, the theoretical foundations for understanding child abuse and neglect and BPD, and descriptions of the specific applications of CBT, SFT, DBT, and pharmacotherapy for BPD, and TF-CBT, AF-CBT, relaxation training and social skills training for CM as intervention tools in mental health treatment settings.

Chapter 2: Literature Review

Introduction

Borderline personality disorder (BPD) is a serious mental disorder, which is the most common, complex, and severely impairing personality disorder (Reiss, Lieb, Arntz, Shaw, & Farrell, 2014).

The DSM-5 describes BPD as a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity, beginning in early adulthood and present in a variety of contexts, as indicated by five (or more) of the following: (1) frantic efforts to avoid real or imagined abandonment; (2) a pattern of unstable and intense interpersonal relationships characterized by alternating between extremes of idealization and devaluation; (3) identity disturbance: markedly and persistently unstable self-image or sense of self; (4) impulsivity in at least two areas that are potentially self-damaging (e.g., spending, sex, substance abuse, reckless driving, binge eating); (5) recurrent suicidal behavior, gestures, or threats, or self-mutilating behavior; (6) affective instability due to a marked reactivity of mood (e.g., intense episodic dysphoria, irritability, or anxiety usually lasting a few hours and only rarely more than a few days); (7) chronic feelings of emptiness; (8) inappropriate, intense anger or difficulty controlling anger (e.g., frequent displays of temper, constant anger, recurrent physical fights); and (9) transient, stress-related paranoid ideation or severe dissociative symptoms (American Psychiatric Association (APA), 2013).

It is a costly disorder and individuals diagnosed with BPD are frequently dominated by intense emotional pain and distress (Amner, 2012). BPD is characterized by emotional instability, neurosis, unstable self-image, distress, difficulty in forming

stable relationships, excessive self-criticism and chronic feelings of emptiness, instability in goals, aspirations, values, or career plans, paranoia of being abandoned or rejected, susceptible to feeling slighted or insulted, views of others selectively biased toward negative vulnerabilities, and suicidal ideation (APA, 2013). Individuals with BPD experience intense fears of abandonment that can transpire even when the person is anticipating the separation. For example, a person might panic or become angry when a significant other goes out of town, even if the trip was previously planned and the individual with BPD was already told about the trip. BPD is also illustrated by identity problems, such as a weak or distorted sense of self, which can be demonstrated through intense changes in interests, goals or values. People with BPD often sabotage healthy relationships, quit school right before graduation, or do not take a promotion at work. Impulsivity is another characteristic of BPD whereas the individual engages in self-damaging acts such as gambling, substance abuse, reckless driving, unsafe sex, binge eating, or unwise spending (APA, 2013). Those people with BPD find it very challenging to control their emotions leading to disproportionate or inappropriate anger that can result in temper problems or physical fights. Lastly, individuals with BPD might suffer from dissociative symptoms or paranoia when under stress (APA, 2013). The DSM–5 (American Psychiatric Association, 2013) also states that those with BPD have intimacy issues whereas they experience intense, unstable, and conflicted close relationships, which include feelings of mistrust, neediness, and anxious preoccupation with "real or imagined abandonment and close relationships frequently perceived in extremes of idealization and devaluation fluctuating between over involvement and withdrawal" (pg. 663). Individuals with BPD often have a black and white outlook and idealize someone

one day and devalue him or her the next. Individuals with BPD often experience chronic feelings of emptiness and may make excessive efforts to avoid abandonment. While it is not indicated in the diagnostic criteria, there is frequently a background of childhood neglect or abuse (sexual, physical or emotional) found in individuals diagnosed with BPD (Tyrka, Wyche, Kelly, Price, & Carpenter, 2009).

Early childhood maltreatment is a risk factor for later psychopathology. Child abuse and neglect negatively affects social, emotional, and psychological development as well as the capability to foster and sustain interpersonal relationships throughout childhood, adolescence, and adulthood (Theran & Han, 2013). Childhood maltreatment includes physical abuse, sexual abuse, emotional abuse, and neglect. Child physical abuse is defined as purposefully hurting a child causing injuries such as bruises, broken bones, burns, and cuts (Norman et al., 2012). Child sexual abuse is a form of child abuse that includes sexual activity with a minor (Wissink, Van Vugt, Moonen, Stams, & Hendriks, 2015). The definition of childhood emotional abuse is described as emotional maltreatment or emotional neglect of a child and can involve intentionally trying to scare, humiliate, isolate, or ignore a child (Slep, Heyman, & Snarr, 2011). Finally, child neglect is explained as a lack of meeting a child's basic needs, including the failure to provide adequate health care, supervision, clothing, nutrition, housing as well as their physical, emotional, social, educational and safety needs (U.S. Department of Health and Human Services, 2007). Emotional maltreatment is a significant predictor of negative outcomes because it affects the sense of self more than physical abuse does, conceivably because it is correlated more with interpersonal degradation.

Literature Search Strategies

Electronic databases including EBSCO database, PsychINFO, PsycARTICLES, and ProQuest were searched for articles on BPD, treatment for BPD, all forms of childhood maltreatment, and treatment for child abuse and neglect from 1993 to present. Relevant keywords that were used in the search included "childhood maltreatment," "borderline personality disorder (BPD)," "childhood sexual abuse," "childhood physical abuse," "childhood neglect," "childhood emotional abuse," "child abuse treatment," "BPD treatment," and "BPD symptoms." Articles found during these searches were used to identify other articles that cited them or were cited by them. The selected studies used in the meta-analysis were peer-reviewed.

Overview of the Literature Review

This literature review relevant to BPD and childhood maltreatment was performed in the context of understanding the relative importance of all forms of childhood maltreatment on BPD in adults. First, theoretical approaches for BPD and childhood maltreatment are discussed. Next, research on relationships between childhood maltreatment and BPD are outlined, with research in each area discussed. Treatments for BPD and childhood maltreatment are then reviewed. Finally, the negative outcomes of childhood maltreatment, both short term in childhood and long term into adulthood, are presented.

Theoretical Approaches

Two theories offer a foundation for understanding childhood maltreatment and BPD, which form the rationale for the literature review and research question. The first model discusses Glaser's theory of emotional abuse and neglect. The other concept

examines Linehan's (1993) theory, which identifies the developmental path leading to BPD.

Glaser's Theory of Emotional Abuse and Neglect

Glaser's (2011) theory includes five categories within the definition of emotional abuse and neglect. The first one is emotional unavailability, unresponsiveness, and neglect; which include parental insensitivity, the inability to respond to the child's emotional needs, and having no alternative plan to provide for the child emotionally. The second grouping is negative attributions and misattributions to the child whereas the parent exhibits hostility, blame, denigration, rejection, or scapegoating towards the child. This interaction is frequently based on the belief that the child deserves this response due to basic negative attributions to the child (Glaser, 2011). Some children start to believe in and act out the negative attributions ascribed to them. The third type is developmentally inappropriate or inconsistent interactions with the child. This consists of expectations outside or below the child's developmental capacity; harsh and inconsistent discipline; and experiencing confusing or traumatic events and interactions, such as domestic violence (Glaser, 2011). The fourth category is failure to recognize or acknowledge the child's individuality and psychological boundary. Glaser (2011) described how parents are incapable of differentiating between the child's reality and the adult's belief and wishes. The last grouping is failing to promote the child's social adaptation. This is explained as failure to foster the child's socialization within the child's context, by isolating the child or by failing to provide adequate stimulation and opportunities for learning. This conceptual framework is relevant to the topic of study because it explains how specific childhood experiences such as these could shape a child as they age into

adulthood, potentially leading to BPD.

Linehan's Theory

Linehan's (1993) theory assesses the etiology of impulsivity, independent of emotion dysregulation, in the developmental path leading to BPD. Individuals with BPD have (a) heightened emotional sensitivity, (b) inability to regulate intense emotional responses, and (c) slow return to emotional baseline. Shared interactions between predisposing biological vulnerabilities and environmental risk factors shape BPD development among vulnerable individuals, such as impulsive and emotionally sensitive children who are placed in high-risk environments (Crowell, Beauchaine, & Linehan, 2009). These children could experience substantial trouble inhibiting extreme emotions in an invalidating context by family members, inconsistent use of punishment, and escalation of anger during interactions. This teaches the child that exhibiting emotions is unwarranted and should be coped with internally and without parental support (Linehan, 1993). Subsequently, the child does not learn how to understand, label, regulate, or tolerate emotional responses but rather learns to waver between emotional inhibition and extreme emotional lability, and does not learn how to solve the problems contributing to these emotional reactions. Crowell et al. (2009) explained that the development of extreme emotional lability characteristic of BPD is shaped and maintained by the caregiving environment and is based on characteristics of the child (e.g., baseline emotional sensitivity) and the developmental context. It was also illustrated that by mid- to late adolescence there is a pattern of distinguishable characteristics and maladaptive coping strategies that signify heightened risk for later BPD, whereas these traits and behaviors could intensify risk for BPD across development. This theory is relevant to the

topic of study because it explains how specific events and incidents during childhood and adolescence could increase the risk for BPD potentially developing in adulthood if not properly remedied.

Prevalence of BPD

The prevalence of BPD is approximately 2% of the general population and as high as 20% among the clinical population. The DSM-5 states that although both genders can be diagnosed with BPD, women are primarily diagnosed (APA, 2013). According to the diagnostic interview data from the National Comorbidity Study Replication (NCS-R), the prevalence of any personality disorder is 9.1%, and borderline personality disorder is 1.4% among adults aged 18 and older (Lenzenweger, Lane, Loranger, & Kessler, 2007). Gender and race were found to be unrelated to the prevalence of personality disorders (U. S. Department of Health and Human Services, National Institutes of Health, National Institute of Mental Health, n.d.). The prevalence rates for BPD fluctuate between 0.5 % and 1.4 % of the total population in numerous studies with large adult populations (Samuels et al., 2002). Based on data from the National Epidemiologic Survey on Alcohol and Related Conditions, two studies found higher rates of 2.7 % and 5.9 %, respectively, depending on how strictly the diagnostic rules are applied (Grant et al., 2008; Tomko, Trull, Wood, & Sher, 2014). Despite the differences in prevalence rates, there is reliable proof for high comorbidity of BPD with common mental disorders, such as mood, anxiety, and substance use disorders (Coid, Yang, Tyrer, Roberts, & Ullrich, 2006; Lenzenweger, Lane, Loranger, & Kessler, 2007). This is the first study that associates the amount of BPD symptoms in the general population to comorbidity of common mental disorders and mental disability (Coid et al., 2006; Lenzenweger et al.,

2007). In a representative population sample of adults, even low numbers of BPD symptoms are linked with psychiatric comorbidity and functional disability. It was found that individuals with ≥ 5 BPD symptoms consisted of a considerably higher percentage of females than the categories of people with 0 or 1–2 symptoms (ten Have et al., 2016). This differs from previous population studies, which have illustrated no gender differences in the prevalence rate of BPD (Coid et al., 2009; Lenzenweger et al., 2007); however, it does substantiate the implication in the DSM-5 that BPD is more common among women (APA, 2013). It is possible that the gender difference in clinical studies could result from selection bias in which women seek health care more often than men (Sansone & Sansone, 2011). In mental healthcare community settings, the prevalence of BPD is almost equal to male to female. In contrast, in services, the majority are women since they are more likely to seek treatment (National Collaborating Centre for Mental Health (UK), 2009).

Treatment for BPD

BPD can have a good prognosis if the clinician provides treatment appropriately and if the client is consistent with attending therapy sessions as well as utilizing and applying the techniques that will help with the symptoms of this disorder as discussed in treatment. Psychotherapeutic approaches utilized in the management of BPD include psychotherapy, consisting of cognitive behavioral therapy (CBT), schema-focused therapy (SFT), and dialectical behavior therapy (DBT), and pharmacotherapy (O'Connell & Dowling, 2014). Psychotherapy offers the best outcomes for people suffering from BPD (Loveless, Whited, Rhodes, & Cellucci, 2016). Psychotherapy is the treatment of mental or emotional illness by talking about problems instead of by using

medicine or drugs. CBT helps individuals recognize and modify core beliefs and behaviors that cause inaccurate perceptions of themselves and others and difficulties interacting with others. It also helps decrease mood and anxiety symptoms and lessen the number of suicidal or self-harming behaviors (U. S. Department of Health and Human Services, National Institutes of Health, National Institute of Mental Health, n.d.). SFT and DBT have proven to be an effective treatment for BPD and have the same objective to help individuals deal with emotional dysregulation (Fassbinder, Schweiger, Martius, Wilde, & Arntz, 2016; National Institute of Mental Health (NIMH), 2011). There are several randomized controlled trials and case illustrations that support the effectiveness of SFT and DBT for the treatment of BPD (Huss & Baer, 2007; Katz & Cox, 2002; Neacsiu & Linehan, 2014). SFT focuses on generating structural changes to an individual's personality by utilizing many behavioral, cognitive, and experiential methods that center on the therapeutic relationship, daily life outside therapy, and past traumatic experiences (Choi-Kain, Finch, Masland, Jenkins, & Unruh, 2017). DBT is developed initially from CBT (Loveless et al., 2016). It focuses on helping people with BPD decrease impulsivity, learn skills to control intense emotions, reduce self-destructive behaviors, and improve relationships through mindfulness and acceptance or being aware of and attentive to the current situation and emotional state (Neacsiu & Linehan, 2014).

Psychotherapy

Psychotherapy is the chief treatment for borderline personality disorder (Stoffers, Voellm, & Lieb, 2009). The main components of personality disorder, significant impairment of interpersonal function, identity issues, and noticeable social dysfunction, are all complex to measure (Bateman, Gunderson, & Mulder, 2015). On the whole, data

support the effective use of psychotherapy for adult survivors of childhood abuse (Price, Hilsenroth, Petretic-Jackson, & Bonge, 2001). The rationale for this intervention is that personality, and its disorders develop from an interaction between genetic factors and developmental processes, shaped by adverse life events. The core symptoms of the disorder are problems with personal and social relationships (Bateman et al., 2015). Psychosocial interventions intend to decrease life-threatening symptoms, improve afflicting mental state symptoms, and offer bases for optimism, especially for borderline personality disorder. Therapy should be an organized and structured collaboration in which patients are urged to accept control over themselves. Clinicians should be receptive, validating, open, involved, attentive, and motivated to work on handling life situations as well as meticulously supervised (Stoffers et al., 2009).

Cognitive Behavioral Therapy (CBT)

Cognitive behavioral therapy (CBT) is talk therapy that focuses on altering negative thoughts, behaviors, and emotional responses related to psychological distress. It is based on the concept that maladaptive thinking and behaving play a part in the occurrence and maintenance of psychological disorders (Price, Hilsenroth, Petretic-Jackson, & Bonge, 2001). This method combines behavioral and cognitive elements with the objectives of exchanging maladaptive thoughts and behaviors with more adaptive ones as well as controlling or handling affect. CBT often employs homework assignments, urging the routine of techniques in and out of session, and collaboration between the clinician and patient working together to discredit cognitive distortions systematically, especially those involving experiences of childhood maltreatment and BPD symptoms (Price et al., 2001).

Schema-Focused Therapy (SFT)

Schema-focused therapy (SFT) is defined as psychological treatment that helps individuals change negative, lifelong behavior patterns (schemas) and is frequently utilized when other treatments have not been successful. It is a comprehensive treatment for BPD (Young, Klosko, & Weishaar, 2003; Arntz & van Genderen, 2009). This technique was first created and assessed as an outpatient treatment for patients with severe and chronic disorders such as BPD. The objective of SFT for BPD is to alter maladaptive schemas and decrease the triggering of maladaptive schema modes. Treatment is usually split into three phases: (a) bonding and emotional regulation, (b) schema and schema mode change, and (c) development of autonomy (Kellogg & Young, 2006; Young et al., 2003). Multiple randomized controlled trials and case examples have established SFT's value in treating BPD (Farrell, Shaw, & Webber, 2009; Giesen-Bloo et al., 2006; Nadort et al., 2009; Seavey & Moore, 2012). Childhood maltreatment experiences involving repeated and consistent invalidating interactions with caregivers generate compelling maladaptive schemas that could facilitate the development of BPD pathology (Specht, Chapman, & Cellucci, 2009) and foster the development of compensatory schema-driven behavioral patterns to aid in the survival within the home environment (Loveless et al., 2016). Results illustrate that inpatient SFT can drastically decrease symptoms of severe BPD and worldwide severity of psychopathology (Riess, Lieb, Arntz, Shaw, & Farrell, 2014). The concept of SFT is that early maladaptive schemas elicit under- or over- regulated emotion and action states represented as modes, which are perceived as impeding clients' ability to utilize adaptive coping or social skills. Reducing the intensity and frequency of maladaptive modes and reinforcing adaptive modes helps individuals adjust appropriately to life situations and enhance their quality of

life. Individual SFT has exhibited effectiveness for BPD psychopathology and crucial psychosocial outcome measures, such as quality-of-life and cost-effectiveness (Giesen-Bloo et al., 2006; van Asselt et al., 2008).

Dialectical Behavior Therapy (DBT)

Dialectical behavior therapy (DBT) is a multi-pronged approach, first introduced by Dr. Marsha Linehan in the US, comprised of weekly one-to-one sessions and skills group training as well as access to individual therapists in times of crisis (Linehan, 1993; Linehan, 1993b). There are four modes of intervention: group therapy, individual psychotherapy, phone calls, and consultation team meetings, which run simultaneously, usually over 12 months (Bateman et al., 2015). DBT effectively decreases maladaptive behaviors and utilizes a skills-based approach to teach individuals how to manage emotions, tolerate distress, and improve relationships (Linehan & Dexter-Mazza, 2008). Evidence showed that DBT was a substantially effective treatment for BPD (Bloom, Woodward, Susmaras, & Pantalone, 2012; Lynch, Trost, Salsman, & Linehan, 2007; O'Connell & Dowling, 2014). It has been proven to be effective with several mental illnesses, including BPD and community mental health settings to treat individuals with BPD (Blackford & Love, 2011). Twenty-eight studies were identified that had involved a total of 1804 people with BPD (Stoffers et al., 2012). These studies examined various psychological treatments. Several studies utilized DBT, which proved to help people with BPD, consisting of a reduction in inappropriate anger, a decrease in self-harm, and progress in general functioning. A meta-analysis of 16 studies of DBT for BPD showed a low overall dropout rate (27.3%) and moderate before-and-after effect sizes for total results as well as suicidal and self-injurious behaviors (Stoffers et al., 2012). The most

recent Cochrane review determined that DBT is evidence based for BPD built on sufficient replication studies (Stoffers et al., 2012). Cristea et al. (2017) conducted a meta-analysis consisting of 33 trials (2256 participants) that resulted in DBT and psychodynamic approaches significantly improving borderline-relevant outcomes (symptoms, self-harm, and suicide) compared with control interventions.

DBT seeks to empower people with BPD by supplying them with coping skills and offering structure to the environment, which allows the client to apply these skills. DBT focuses on applying both acceptance and validation strategies and change (behavioral) strategies to achieve a balance client functioning. It is beneficial to use that as the starting point for change rather than letting the emotions linked with that situation take over and leave an individual feeling trapped and incapacitated. Utilizing mindfulness will help the patient recognize having those thoughts and feelings, accept them by being present in one's feelings, and focus on one's present behavior and the current factors that control that behavior (Neacsiu, Ward-Ciesielski, & Linehan, 2012). Interpersonal effectiveness helps a person focus on achieving one's goals with other people to maintain relationships and maintain self-esteem in interactions with other people. Emotion modulation can assist with changing distressing emotional states, improving the moment when one has those feelings, discussing pros and cons of the current situation, and helping the patient develop coping skills and more adaptive ways of dealing with difficult "stressful" situations. Teaching stress tolerance skills will help one to learn self-soothing techniques, and radical acceptance, which conveys the message, "this is how I'm feeling and I accept it, now I'm going to change it".

Working with this group of individuals diagnosed with BPD is demanding and requires skilled and trained clinicians with specific skills (O'Connell & Dowling, 2014). It is often extremely challenging to connect with and develop therapeutic relationships with these clients (Horsfall, 1999; Koekkoek, Van Meijel, Schene, & Hutschemaekers, 2009; Ma, Shih, Hsiao, Shih, & Hayter, 2009). In addition to the weight the therapeutic partnership holds in BPD treatment, the quality of training for therapists utilizing DBT is essential to therapeutic triumph (Barnicot et al., 2012; Carter, Willcox, Lewin, Conrad, & Bendit, 2010). Individuals with BPD who have gone through DBT treatment positively perceive those clinicians who are non-judgmental, validating, and demanding in their approach (Cunningham, Wolbert, & Lillie, 2004). DBT can positively affect therapists, altering therapeutic pessimism towards one of optimism and experiencing personal changes resulting from their work with clients. Amner (2012) showed that there are financial savings linked with DBT in that with one year of DBT treatment, there is a decrease in secondary mental health care costs associated with BPD. It has also been verified that the most potential for transformation from therapy is found among those individuals with severe symptoms of BPD (Barnicot et al., 2012). Despite the difficulty in treating people with BPD, if the person with BPD engages in their treatment plan, there is a higher likelihood of a decrease in anxiety levels, depression, self-harm, hospital admission, and use of prescribed medication. DBT differs from CBT in that it places less emphasis on using cognitive methods and instead focuses on the learning and practice of new skills (Amner, 2012).

Pharmacotherapy

There is no credible evidence for medication treatment for BPD as a whole (Reiss,

Lieb, Arntz, Shaw, & Farrell, 2014). Pharmacotherapy is only advised as an adjunctive treatment (Lieb, Voellm, Ruecker, Timmer, & Stoffers, 2010). Research shows some evidence for symptomatic improvement with mood stabilizers, antipsychotics, and antidepressants. However, pharmacological treatment does not yield remission of BPD (Paris, 2011). The basis for this method in treating personality disorders is that the behavioral characteristics related to personality disorders might be linked with neurochemical abnormalities of the central nervous system (CNS) (Bateman et al., 2015). Medications only concentrate on explicit attributes of personality disorder's pathological effects, such as affective instability andcognitive–perceptual disturbances. Affective instability is treated with selective serotonin reuptake inhibitor [SSRIs], impulsive aggression is treated with SSRIs or mood stabilizers, and cognitive–perceptive disturbances is treated with low dose antipsychotics. It has been reported that mood stabilizers could reduce affective dysregulation andimpulsive–aggressive symptoms in people with borderline personality disorder (Bateman et al., 2015). Routine prescription of these medications is not evidence-based. The Cochrane Collaboration's first report on BPD determined that there is insufficient evidence to recommend any drug, they are solely symptomatic, and have never been shown to emit a remission (Binks et al., 2006). The NICE guidelines for BPD also resolved that there is insufficient evidence to propose any drug prescription (Kendall et al., 2009). There is stronger evidence for the effectiveness of psychotherapy in BPD than for any medication; therefore, pharmacological treatment should only be utilized as an adjunctive, not primary intervention (Paris, 2010a). Pharmacotherapy should only be utilized when incorporated with psychosocial treatments, should be time limited to deal with particular symptoms,

and stopped when these are settled (Lieb et al., 2010).

Treatment for Childhood Maltreatment

Even though the experience of child abuse or neglect cannot be changed once it has occurred, relationships can be strengthened through clinical interventions (Theran & Han, 2013). There are many treatment options for childhood maltreatment that include but are not limited to, trauma-focused cognitive-behavioral therapy (TF-CBT), alternatives for families cognitive-behavioral therapy (AF-CBT), relaxation training, and social skills training, which will all be discussed in this section. Treatment should always be abuse/neglect focused on helping the child acclimate to the occurrence of having been abused, it should consist of an educational piece, it should focus on the child's relationship with other family members, and it should deal with the non-offending and offending caregivers as well as the child (Kolko & Swenson, 2002; Hensler, Wilson, & Sadler, 2004).

Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)

According to the Diagnostic and Statistical Manual of Mental Disorders-Fifth Edition, (DSM-V-TR; American Psychiatric Association; APA, 2013), "directly experienced traumatic events include, but are not limited to, exposure to war, threatened or actual physical assault/abuse, threatened or actual sexual violence/abuse, being kidnapped, being taken hostage, terrorist attack, torture, being a prisoner of war, natural or human-made disasters, and severe motor vehicle accidents. For children, sexually violent events include developmentally inappropriate sexual experiences without physical violence or injury. Witnessed events include, but are not limited to, observing threatened or serious injury, unnatural death, physical or sexual abuse of another person, domestic

violence, accident, war, or disaster. Indirect exposure through learning about an event is limited to experiences affecting close relatives or friends and experiences that are violent or accidental." Although every child who experiences a traumatic event does not always have trauma symptoms, trauma is frequently thought to be toxic to development, and when traumatic events start in childhood, a child's developmental path could be substantially transformed ((Wamser-Nanney & Vandenberg, 2013). Numerous children prove to be resilient and can flourish and succeed even when they have experienced multiple stressors (Leckman & Mayes, 2007; Little & Akin-Little, 2013; Little, Akin-Little, & Somerville, 2011).

Trauma-focused cognitive-behavioral therapy (TF-CBT) is the best-supported treatment for children with childhood maltreatment, regardless of the number of sessions (Deblinger, Mannarino, Cohen, Runyon, & Steer, 2011; Leenarts, Diehle, Doreleijers, Jansma, & Lindauer, 2013). TF-CBT is a short-term treatment that encompasses individual sessions with children and parents as well as joint parent-child sessions. The primary elements include parenting skills, psycho-education, cognitive coping and processing, affective modulation, relaxation, trauma narrative, in vivo mastery of trauma reminders, conjoint child-parent sessions, and enhancing future safety and development (Cohen, Mannarino, & Deblinger, 2006). It successfully addresses and enhances children's affective response, behavioral functioning and reactions, thinking patterns to the abuse, safety skills, and parenting skills. Even though the consequences of childhood maltreatment can be exhibited in several forms, childhood maltreatment is a risk factor for the development of antisocial, violent, and aggressive behavior. There is distinct evidence that all forms of childhood maltreatment are related with an increased

pervasiveness of mental health problems such as anxiety, posttraumatic stress, depression, suicidal ideation and substance abuse. Chronic childhood maltreatment is linked with disruptions mostly in affective and interpersonal self-regulatory competencies (Deblinger et al., 2011; Leenarts et al., 2013). Although most of the studies have centered on child sexual abuse, evidence also proposes that it is effective for children subjected to a broad range of other kinds of trauma as well as children who have experienced numerous traumatic incidents (Cohen, 2005; Hanson & Jobe-Shields, 2017).

Alternatives for Families – Cognitive Behavioral Therapy (AF-CBT)

Alternatives for Families: Cognitive Behavioral Therapy (AF-CBT) is an evidence-based treatment (EBT) for family conflict, coercion, aggression, and child physical abuse that was recognized by the National Child Traumatic Stress Network (Kolko, Iselin, & Gully, 2011). There are three phases of AF-CBT that consist of engagement and psychoeducation, individual skill building, and family applications to teach alternative skills to the use of coercive behavior (Kolko & Kolko, 2010). The general clinical goals of AF-CBT include focusing on key risk and consequences of abuse, integrating child, parent, and child-parent sessions, detecting other problems, identifying parents' use of harmful behaviors to avoid re-abuse, improving child's behavioral and social functioning and well being, and monitoring progress and outcomes (Kolko, Baumann, Herschell, Hart, Holden, & Wisniewski, 2012). Empirical support has been found in studies of families for AF-CBT presenting with child physical abuse (Kolko, 1996a, 1996b; Kolko et al., 2011) and child behavior disorders (Kolko, Campo, Kelleher, & Cheng, 2010; Kolko, Dorn, et al., 2009). An RCT with abused and maltreated children found AF-CBT had greater effectiveness in numerous child areas,

including less externalizing symptoms and diminished parent-to-child violence risk than community parent training groups (Vickerman & Margolin, 2007). AF-CBT includes child-directed elements, parent-directed factors, and parent-child sections (Paul, Gray, Elhai, Massad, & Stamm, 2006). The child-directed factors contain behavioral, cognitive, and effective interventions. Children are taught to comprehend family violence, their thoughts, feelings, and reactions, and help normalize their responses and alter their maladaptive thoughts. The parent-directed elements are comprised of their feelings about family violence and family functioning. Parents are provided effective and behavioral treatments with a strong concentration on self-regulation, how to deal with their feelings of anger and reactions to possible abuse triggers, teach them effective disciplinary skills to respond to negative behavior, and reward positive behavior. The parent-child section includes utilizing a clarification strategy.

In contrast, the family's cognitive distortions about the physical abuse are discussed, the parent's responsibility for the abuse is addressed, the treatment needs of the child and family are focused on, and a safety plan and no-violence contract are developed (Paul et al., 2006). Those children and families who do not obtain interventions to enhance family functioning and decrease the risk of physical abuse could be predisposed to long-term negative outcomes (i.e., a cycle of physical abuse, use of excessive discipline techniques, emotional/behavioral difficulties, aggressive behaviors, and insufficiencies in social skills for children) (Thabet & Vostanis, 2000). For that reason, it is essential to provide effective treatments to families subjected to these impediments.

Relaxation Training

Relaxation training is employed as an intervention by dealing with the child's fear or anxiety reactions to abuse-related cues allowing them to select helpful behaviors to deal with their situation and facilitate more successful affect regulation (De Arellano et al., 2005). It was helpful for children to utilize a personalized relaxation cassette outside the therapy sessions (King et al., 2000). This method involves educating the child on a few relaxation techniques consisting of deep/diaphragmatic breathing exercises, guided imagery, and progressive relaxation. The objective in all of them is to generate the body's natural relaxation response, described by slower breathing, lower blood pressure. A feeling of increased well being (U. S. DHHS, NIH, National Center for Complementary and Integrative Health, 2016). Relaxation training could be particularly advantageous in assisting children in managing their fears that they might be experiencing when not in therapy (Foster & Hagedorn, 2014). Deep/diaphragmatic breathing helps individuals decrease sympathetic arousal in the nervous system, lower heart rate, breathing rate, and other physiological reactions related to anger and anxiety (De Arellano et al., 2005). This technique is simple, easy to learn, can be done anywhere, and focuses on full, cleansing breaths; deep breathing is a simple yet powerful relaxation technique. It is easy to learn, can be practiced almost anywhere, and provides a fast way to get your stress levels down (US DHHS, NIH, NCCIH, 2016). Guided imagery is a form of meditation that encompasses imagining a setting where the individual feels at peace, allowing them to let go of all tension and anxiety. This visualization can be done alone or with a therapist and in silence or with listening devices such as a sound machine, soothing music, or a recording that matches the setting (e.g., ocean waves sounds). Progressive muscle relaxation (PMR) is used as a way of dealing with tension. It is a two-step technique in

which a person systematically tenses and relaxes different muscle groups in the body. When applied with younger children, this method could be expressed in a story. For example, a story of a turtle meeting several other animals can center on a different muscle group with each part of the story. During different aspects of the story, the turtle is frightened by an encounter with another animal and rapidly pulls his head and legs inside his shell, indicating to children that they will tense their muscles and pull themselves into a ball. After the turtle recognizes that the other animal is friendly, he stretches each leg individually, signaling to the children they can relax their muscles (De Arellano et al., 2005). When practiced regularly, it helps individuals become familiar with tension and relaxation in different parts of the body. This allows people to react when first beginning to feel muscle tension that comes with stress and relax their body and mind. Empirical evidence defends the effectiveness of relaxation training in treating numerous clinical conditions such as headaches, asthma, and anxiety (Chiang, Ma, Huang, Tseng, & Hsueh, 2009; Hashim & Zainol, 2015) in children and adolescents. Since the purpose of relaxation methods is to teach children how to relax and calm, it is important that the setting in which PMR is taught is quiet and non-disruptive (De Arellano et al., 2005). Individuals who utilize relaxation techniques often and regularly have a higher likelihood of benefitting from them.

Social Skills Training

Social skills are the specific behaviors that an individual exhibits to perform competently on a social task (e.g., active listening skills, reciprocal communication, ignoring, etc.) (Holosko, 2015). Social skills training helps the child cope with coping strategies to help them handle negative emotions and enhance their social and

interpersonal functioning. Research indicates that social skills are closely linked to social development, and negative social consequences can continue if specific social behaviors are not acquired (Dogan et al., 2017). Inadequate social skills could be caused by developmental delays in language acquisition, motor performance, or faulty learning (Holosko, 2015). Studies have recurrently illustrated that children with insufficient social competence are at greater risk for poor school adjustment and adult psychopathology than socially competent children. Children with poor social skills are frequently raised in dysfunctional families, whereas family members feel isolated and react to each other in a passive, ineffective manner (Webster-Stratton & Reid, 2010).

Therapists straightforwardly and enthusiastically tackle affect and interpersonal regulation problems since they were interfering with day-to-day functioning (Cloitre, Koenen, Cohen, & Han, 2002). Clinicians focus on looking at the symptoms through a trauma lens, working on concrete skills, and utilizing the group process to reduce stigmatization and enhance normalization and social support (Cook et al., 2017). Social skills training programs rely on social learning principles effectively with several clinical populations, including maltreated children (Holosko, 2015). The cognizance of the serious long-term consequences of child maltreatment should foster better identification of those at risk and create effective interventions to protect children from maltreatment (Rosana et al., 2012). Often, there are no symptoms after disclosure of abuse; however, offering support and education to those children could prevent future problems. They should be seen by a certified and qualified mental health professional for a clinical assessment to determine treatment needs, strengths, and weaknesses. The professional should have experience working with victims of child abuse and neglect and

specific knowledge of the process, factors related to problems exhibited by abused and neglected children, standard outcomes of abuse and neglect cases, and the role of social services and legal responses to maltreatment (Lipovsky & Hanson, 2007).

Impact of Childhood Maltreatment

Lobbestael, Arntz, and Bernstein (2010) conducted a study that examined the relationship between five forms of childhood maltreatment (sexual, physical, and emotional abuse, emotional and physical neglect) and 10 personality disorders (PDs). The findings of that study demonstrated that sexual abuse was linked with symptoms of paranoid, schizoid, borderline, and avoidant PD; physical abuse with antisocial PD; emotional abuse with paranoid, schizotypal, borderline, and cluster C PD; and emotional neglect with histrionic and borderline PD. Multiple studies have found that childhood sexual abuse is correlated with BPD (Battle et al., 2004; Johnson, Cohen, Brown, Smailes, & Bernstein, 1999; Kendall-Tackett, Williams, & Finkelhor, 2001). The outcome that emotional abuse and emotional neglect were also linked with BPD implies the significance of emotional maltreatment in these individuals, which are consistent with several other studies (Battle et al., 2004; Bierer et al., 2003; Johnson, Cohen, Chen, Kasen, & Brook, 2006).

Adults who experience childhood maltreatment described more symptoms of adult depression, anxiety, and more impairment due to mental and physical health problems (Herrenkohl, Hong, Klika, Herrenkohl, & Russo, 2013). Evidence suggests that child abuse and neglect are linked to numerous difficulties in adulthood, including diagnoses and symptoms of mental health disorders (Herrenkohl et al., 2013). This maltreatment led to insecure attachments and failed relationships from childhood into

adulthood. Increased use of programs that foster school readiness and academic achievement for children who have been abused and neglected could decrease the long-term mental health, substance use, and physical health effects of child maltreatment. It is imperative that service providers and policymakers identify practices to strengthen and restructure fragmented service delivery procedures so that maltreated children and families can access crucial services (Luthar & Brown, 2007).

Short Term Effects of Child Maltreatment

Short-term effects of childhood maltreatment include multiple symptoms normally reported by abused children, including conduct issues, low self-esteem, academic difficulties, depression, sexualized behavior, difficulty regulating emotions, interpersonal problems, sense of betrayal, powerlessness and stigmatization, and suicidal ideation (Price, Hilsenroth, Petretic-Jackson, & Bonge, 2001). Children start to develop coping skills after their initial reactions to abuse. These coping skills are not sufficient to overcome the negative effects of abuse and neglect, leading to long-term, chronic symptoms in adulthood.

Long Term Effects of Child Maltreatment

Childhood abuse and neglect have been convincingly thought to be risk factors in the development of personality disorders. MacMillan et al. (2001) expressed that a history of physical or sexual abuse during childhood is strongly associated with lifetime psychopathology. A study done by Price et al. (2001) demonstrated that the long-term effects of childhood abuse for those adults who were abused as children usually exhibit

sexual dysfunctions, depression, aggression, hostility, anger, fear, suicidal ideation, anxiety disorders, and personality disorders. Additionally, difficulties with interpersonal discord, low self-esteem, parenting difficulties, and substance abuse are reported. The duration of abuse and the relationship of the perpetrator to the victim escalates the likelihood of long-term consequences for childhood maltreatment survivors.

Kendall-Tackett, Williams, and Finkelhor (2001) describe possible pathways (emotional, social, and cognitive) in which childhood maltreatment affects adult health. The emotional pathway centers on mental health outcomes. Social pathways focus on the capability to develop and sustain social relationships. Adults who have experienced childhood sexual abuse often have problems with interpersonal relationships, specifically intimate relationships. These relationships are essential since the quality of social ties has been linked with physical and mental health outcomes in general adult populations (Springer, Sheridan, Kuo, & Carnes, 2003). Cognitive pathways concentrate on beliefs and attitudes regarding health perceptions. For example, childhood abuse is adversely linked with perceived general health. Familial factors (such as dysfunctional family environments) and social factors (such as financial hardship) correlated with the experience of child abuse and neglect could lead to greater vulnerability and risk of mental health disorders (MacMillan et al., 2001).

The diathesis-stress model shows that the connection between childhood maltreatment and BPD traits comes from genetic influences that coincide with internalizing and externalizing disorders (Bornovalova et al., 2013). It proposes that behavioral disinhibition's erratic and unpredictable characteristics, including externalizing behaviors and internalizing behaviors, act as pre-existing vulnerabilities. In

contrast, child maltreatment is more of an environmental risk factor. Externalizing behaviors consist of impulsivity, inability to hinder undesirable actions, negative emotionality, and internalizing behaviors that tend to encounter depression, anger, and anxiety. It is this interaction that yields BPD traits in vulnerable individuals. Individuals with personality disorders report increased rates of childhood maltreatment of all forms. Tyrka, Wyche, Kelly, Price, and Carpenter (2009) conducted a study that found the effects of various kinds of childhood maltreatment are associated with sub-clinical levels of symptoms of adult personality disorders.

It is important doctors acknowledge that childhood maltreatment predisposes adults to a multitude of chronic mental and physical health problems years after the abuse. Several therapeutic methods have been employed in treating adults who have a history of childhood maltreatment. Studies have shown that group therapy is effective and has demonstrated positive outcomes in decreasing symptomatic distress, boosting self-esteem, and strengthening functioning (Price et al., 2001). Individuals engaged in group therapy have maintained their treatment goals for months and years after termination of therapy. Although group therapy is very effective, it is also recommended that survivors of childhood maltreatment engage in individual therapy concurrently. Another therapeutic approach is CBT interventions in conjunction with pharmacotherapy, which helps decrease lingering symptoms related to childhood abuse and neglect (Springer et al., 2003).

Ethical Concerns

One ethical concern that must be considered with treating individuals with BPD is the therapist's competence in working with personality disorders. Many clinicians lack

the specialized training necessary to provide successful treatment to these clients. Magnavita, Levy, Critchfield, and Lebow (2010) expressed that a risk-benefit analysis needs to be completed for individuals who have a personality disorder in collaboration with the patient on multiple issues that affect the course outcome of treatment. Two questions guide ethical treatment of these patients to safeguard the treatment process and optimize the outcome, which includes, "What are the risks if I continue to treat the patient without possessing specialized competence in the treatment of personality disorders?" and the opposite, "What are the risks if I refer to someone else whom I know has competence in treating personality disorders?" In answering the first question, I would respond that the risk of treating an individual with no competence would result in the treatment being inefficient. It is more than likely that the patient will drop out of treatment. The second question would be that the risk of referring the person to someone else might provoke a feeling of abandonment, which could worsen the patients' condition and possibly make him feel that he is untreatable, or unimportant leading to potential demoralization and worsening of the condition. A collaborative relationship must be continually honored, and informed consent is given, and (where available) empirical evidence is utilized to make optimal treatment decisions.

Methodology of the Study

The study is a meta-analysis of published research into the relative importance of all forms of childhood maltreatment as it contributes to BPD in adults. Meta-analysis is a quantitative, formal, epidemiological study design utilized to methodically evaluate primary research outcomes to integrate the findings and draw conclusions about that specific topic of research (Haidich, 2010). Results from a meta-analysis could involve a

more specific assessment of the effect of treatment or risk factors for an illness than any individual study. The necessity to incorporate conclusions from numerous studies makes sure that the meta-analytic research is advantageous and practical based on the sizeable body of research. Effect size is a straightforward way of computing the magnitude of the difference between groups (Sullivan & Feinn, 2012). Effect size highlights the size of the difference instead of confusing this with sample size, is the key finding of a quantitative study by comparing results from different studies, and is a valuable and significant tool in conveying and deciphering effectiveness. As different studies used different methodologies, resulting in different statistics within each, all data extracted were converted to Fisher's Z before aggregating across them. The sample size weighted analyses within each study. All analyses, including the data transformations and calculation of results reported, were conducted using Comprehensive Meta-Analysis, Version 3 (Borenstein et al., n.d.).

Several dependent variables were taken from various pertinent studies, including all forms of childhood maltreatment (i.e., sexual abuse, physical abuse, emotional abuse, and neglect). Literature search strategies used in gathering published reports of quantitative research into childhood abuse and neglect and BPD consisted of searching electronic databases, including EBSCO database, PsychINFO, PsycARTICLES, and ProQuest, for peer-reviewed articles and dissertations. The search included articles on BPD, treatment for BPD, all forms of childhood maltreatment, and treatment for child abuse and neglect from 1993 to the present. Relevant keywords used in the search included "childhood maltreatment," "borderline personality disorder (BPD)," "childhood sexual abuse," "childhood physical abuse," "childhood neglect," "childhood emotional

abuse," "child abuse treatment," "BPD treatment," and "BPD symptoms." Articles found during these searches were used to identify other articles that cited them or were cited by them.

The selected studies identified all forms of childhood maltreatment related to BPD in adulthood, treatment for childhood maltreatment in childhood, and treatment for BPD in adulthood. To guarantee statistical significance, several studies were chosen for the analysis of each part of the meta-analysis. Effects sizes were determined by statistical calculation of Fisher's Z (Borenstein et al., 2007) used in CMA, v3 (Borenstein et al., n.d.). Information obtained from individual studies was utilized according to the mandated requirements of the statistical formula. Single-subject design studies, review articles, studies relating to BPD in children, duplicate studies or dissertation studies published in another format, and qualitative studies were excluded.

Summary

Child abuse and neglect have been linked as risk factors for BPD. Although the association between the two has been studied for years, each form of CM's relative importance as it contributes to BPD in adults has not been studied. Numerous treatments have been used to treat both child abuse and neglect trauma and BPD. However, suppose it can be determined which kind of CM to treat first. In that case, it could guarantee that children receive the appropriate therapeutic intervention early on in childhood to reduce the possibility of developing BPD in adulthood. CM and BPD are based on emotional abuse and neglect theories and the developmental path leading to BPD, respectively (Glaser, 2011; Linehan, 1993). The meta-analysis of CM as it influences BPD in adults consists of quantitative studies with adult participants where the dependent variables are

any form of CM. Studies relating to BPD in children are not quantitative, do not have adults as participants, or focus on other traumas outside that of CM are excluded. In Chapter 3, the methodology for selecting studies to analyze, the calculation of effect sizes, and the grouping of studies by various forms of CM category are explained in detail.

Chapter 3: Research Method

Introduction

Borderline personality disorder (BPD) is a serious mental disorder, considered to be the most common, complex, and severely impairing personality disorder (Reiss, Lieb, Arntz, Shaw, & Farrell, 2014). Early childhood maltreatment (CM) is a risk factor for later psychopathology. Childhood trauma is very common in Borderline Personality Disorder (BPD) subjects and is the main environmental element in BPD development (Martín-Blanco et al., 2014). Child abuse and neglect negatively affect social, emotional, and psychological development as well as the capability to foster and sustain interpersonal relationships throughout childhood, adolescence, and adulthood (Theran & Han, 2013). Childhood maltreatment includes physical abuse, sexual abuse, emotional abuse, and neglect. Children who experience maltreatment usually suffer multiple forms of abuse or neglect (Harvey & Taylor, 2010). There are multiple evidence-based interventions for different kinds of child maltreatment. Examples include, but are not limited to, trauma-focused cognitive-behavioral therapy (TF-CBT), alternatives for families cognitive-behavioral therapy (AF-CBT), relaxation training, and social skills training. There are also numerous psychotherapeutic approaches utilized in the management of BPD that include psychotherapy, consisting of cognitive behavioral therapy (CBT), schema-focused therapy (SFT), dialectical behavior therapy (DBT), and pharmacotherapy (O'Connell & Dowling, 2014). This research focused on the comparative significance of each form of CM as it contributes to BPD, integrating a methodical selection of the literature and meta-analysis of published studies. The study was designed to answer the following research question:

What is the effect size of CM as it contributes to adults diagnosed with BPD?

The answer to this specific research question provided support for CM's contribution to BPD in adults. The study's findings also provided necessary intervention strategies for specific forms of childhood abuse/neglect. They should be treated first when children are exposed to more than one form of abuse and/or neglect.

Research Design and Rationale

A meta-analytic research design was chosen to examine each form of CM's significance. It contributes to BPD because meta-analyses integrate several individual treatment studies into a measurable overall effect size (Ellis, 2010). Meta-analysis generates reasonably meaningful data about the possible advantages of a specific treatment instead of simply statistical significance, which is closely related to sample size and therefore could either overestimate or underestimate the true value of the treatment (Ellis, 2010). Through utilizing weighted comparisons of results based upon the sample size and incorporating studies that might have been discarded previously due to not achieving statistically significant conclusions (Card, 2012), information from a broader range of studies of CM and BPD are accessible to professionals through the meta-analysis. This meta-analysis helped identify and explain how each form of CM contributes to BPD and may improve the effectiveness of mental health treatment for children by focusing on which form of childhood abuse should be treated first and foremost when exposed to multiple forms of CM.

Although the correlation between CM and BPD has been studied for decades, the relative importance of each form of childhood abuse on BPD in adults has not. This research focused on various forms of CM and the importance of each associated with the

development of BPD in adults. This study promoted the practical utilization of various forms of interventions for all forms of CM and treatment approaches for BPD in adults by comparing effect sizes in studies with different characteristics. For example, if the effectiveness of TF-CBT is shown to be only slightly more efficient than AF-CBT for a specific form of CM, the efforts necessitated to use one intervention over the other for successful treatment might not be supported (Deblinger, Mannarino, Cohen, Runyon, & Steer, 2011; Kolko & Kolko, 2010; Leenarts, Diehle, Doreleijers, Jansma, & Lindauer, 2013). Another possible valuable difference in effect sizes could be between BPD treatments using a form of psychotherapy versus BPD treatment using a form of psychotherapy in conjunction with pharmacotherapy (O'Connell & Dowling, 2014). Certain study characteristics and their relationships to effect sizes, such as type of CM and specific intervention approaches (TF-CBT, AF-CBT, relaxation training, and social skills training), could also produce worthwhile information about the proper implementation treatment as well as implications for future research. Several dependent variables were taken from various pertinent studies, including all forms of CM (i.e., sexual abuse, physical abuse, emotional abuse, and neglect). The search included articles on BPD, all forms of CM, and treatment for BPD from 2000 to the present. The selected studies identified all forms of CM related to BPD in adulthood, treatment for CM in childhood, and treatment for BPD in adulthood. When the meta-analysis has been completed**,** certain qualitative aspects of CM treatment and BPD treatment might surface (Ellis, 2010).

Methodology

Selection Criteria

The approach for identifying and selecting studies followed numerous fixed stages with data recorded on how the studies included in the final sample for meta-analysis were chosen. Several dependent variables were taken from various pertinent studies, including all CM forms (i.e., sexual abuse, physical abuse, emotional abuse, and neglect). The selected studies identified all forms of CM related to BPD in adulthood, treatment for CM in childhood, and treatment for BPD in adulthood. To identify statistical significance, several studies were chosen for the analysis of each part of the meta-analysis. The technique for identifying and choosing studies followed numerous stages with information stored on how the studies used in the final sample for meta-analysis were selected. The approach utilized to determine appropriate studies for the meta-analysis included reviewing the abstracts of multiple studies for potential inclusion and data extraction. Those studies that did not meet the criteria to compute effect sizes aptly, however, were found to be relevant to the topic (for example, previous literature reviews or theoretical discussion of CM or BPD) were reviewed to establish the analysis of effect size calculations as well as recommendations for future research.

Group studies reporting quantitative results of the significance of each form of CM as it contributes to BPD were identified via the use of electronic database searches using the following keywords and title words: CM, borderline personality disorder (BPD), childhood sexual abuse, childhood physical abuse, childhood neglect, childhood emotional abuse, child abuse treatment, BPD treatment, and BPD symptoms. The electronic databases searched consisted of EBSCO database, Psych INFO, and

PsycARTICLES to identify articles on BPD, treatment for BPD, all forms of CM, and treatment for child abuse and neglect from 1993 to the present. Relevant keywords used in the search consisted of "childhood maltreatment," "borderline personality disorder (BPD)," "childhood sexual abuse," "childhood physical abuse," "childhood neglect," "childhood emotional abuse," "child abuse treatment," "BPD treatment," and "BPD symptoms."

Abstracts were assessed for inclusion and exclusion criteria. The inclusion criteria included:

- The study being quantitative
- Using various dependent variables such as all forms of CM
    - "Childhood maltreatment"
    - "Childhood sexual abuse"
    - "Childhood physical abuse"
    - "Childhood neglect"
    - "Childhood emotional abuse"
- Data reported for adult participants

Exclusion criteria were single-subject design studies, review articles, duplicate studies or dissertation studies, and qualitative studies. Exploring citations and references of studies manually identified additional studies not found via database keyword and title word searches. Studies that were possibly relevant and available in full-text were thoroughly assessed for inclusion in the meta-analysis. Studies that did not convey means and standard deviations of all forms of CM, or other statistics that could be utilized to

calculate effect sizes, were excluded. The remaining studies were included and categorized for manual data extraction as described in the next section.

Data Extraction

Each study included in the meta-analysis was coded by hand on paper forms. The coding categories were based upon prior literature review (see Chapter 2) and the research question of this study. Several significant issues were taken into account in the assembly of this coding strategy. It was imperative to document all source information correctly as well as quantifiable results to calculate effect sizes. There were key moderator variables such as type of CM or type of BPD constructs that affected the overall effect size estimate for CM. Therefore, data correlating to these issues were coded for each study, and information about participants, information about BPD constructs, and information about outcome measures utilized. The coding categories were broadened or constricted once the actual study was in motion. Data surfaced about what information was central to the research question and what was less significant or unavailable. The paper coding materials were kept, and the information was entered into the statistical software being utilized, which was explained in the next section in more detail. The desired technique for performing a meta-analysis is using paper coding approaches and then entering information into a database. This permitted for simpler data collection and the capability to find errors or adjust the data collection plan as needed (Ellis, 2010).

Data Analysis Plan

Comprehensive Meta-Analysis, Version 3 (Borenstein et al., n.d.). is a thorough, inclusive software program accessible for a fee to download (https://www.meta-analysis.com/pages/cma_manual.php). This program integrated all kinds of meta-analysis

required information throughout conducting this study. This incorporated database records of all literature searched, included and excluded, and additional references relevant to the study. CMA, v3 is also capable of storing statistical data essential for calculating individual effect sizes for each study in the meta-analysis, calculating mean standardized effect size for all included studies, and calculating confidence intervals to demonstrate results. Therefore, all strategies for data analysis reviewed in this section refer directly to the utilization of CMA, v3.

Effect Size Calculation and Statistical Procedures

Effect size is a straightforward way of computing the magnitude of the difference between groups (Sullivan & Feinn, 2012). Effect size highlights the size of the difference instead of confusing this with sample size. It is the key finding of a quantitative study comparing results from different studies and is a valuable and significant tool in conveying and deciphering effectiveness. Effects sizes were determined by statistical calculation of Fisher's Z used in CMA, v3. Information obtained from individual studies was utilized according to the mandated requirements of the statistical formula. Single-subject design studies, review articles, studies relating to BPD in children, duplicate studies or dissertation studies published in another format, and qualitative studies were excluded.

After computing all individual effect sizes for the studies, collective findings across studies were calculated using CMA, v3 coded to simulate a random-effects model. The effect sizes from each study were weighted to signify sample size. The 95% confidence interval for this overall effect size was also computed. A table of the individual studies' mean standardized effect size and the overall mean standardized effect

for CM experiences in adults diagnosed with BPD was generated as well, using CMA, v3.

Heterogeneity Analysis

Statistical heterogeneity reflected variance in obtained effect sizes and our confidence in the magnitude of the variance as well as the proportion of the variance due to actual effects and not a random error. Given that there were various sub-analyses within studies included in the meta-analysis, all results reported were based on random effects models, which allowed the true effect size to vary across studies (Boronstein, Hedges, & Rothstein, 2007). Due to the various clinical applications involved in the meta-analysis, heterogeneity was assumed. The analysis of this statistic solved the question about the forms of CM as it contributes to BPD in adults across studies. A table of study findings also represented the heterogeneity of the sample of studies utilized in this meta-analysis. In CMA, v3, as different studies used different methodologies, all analyses including the data transformations and calculations resulting in different statistics within each, all data extracted were converted to Fisher's Z before aggregating across them. The sample size weighted analyses within each study. The *Q* statistic (a measure of weighted squared standard deviations of the included studies) represents a percentage of true statistical heterogeneity compared to observed variation in the results. It can therefore be compared and interpreted across many different analyses.

Moderator Analyses

After the initial effect sizes of the individual studies were computed and compared to the overall mean effect size, I observed trends in the data and further investigated moderator effects. There were key moderator variables such as type of CM

or type of BPD construct that affected the overall effect size estimate for CM. Therefore, data correlating to these issues were coded for each study, and information about participants, information about BPD constructs, and information about outcome measures utilized. For example, suppose I found consistently greater effect sizes for emotional abuse and neglect than other CM forms. In that case, it may suggest that future research should focus on treating these forms of maltreatment when more than one is identified in patients. Alternatively, suppose I found sexual abuse or physical abuse with greater effect sizes than other CM forms. In that case, future research may be indicated in terms of matching specific types of CM to specific trauma focused therapy.

Threats to Validity

In a meta-analysis, internal validity entailed assessing that the individual research studies used were of high quality and suitable to answering the meta-analytic research question. Threats to internal validity involved potential complications with the studies being used, which might or might not be apparent in the published edition of the study. Since the meta-analysis is required to integrate the shortcomings present in the source studies, these flaws cannot be controlled for in the usual sense as part of the meta-analytic design. Therefore, the researcher is obligated to assess the sources of bias and convey them qualitatively to be accounted for in the final analysis of the overall results (Card, 2012). Hence, many coding categories were created to collect data on each study linked to the selection and assignment of participants to treatment or control groups and possible attrition bias, the bias in reporting outcomes, and reliability to treatment.

External validity in a meta-analysis involves the pertinence of the research question being asked and the documentation, inclusion, and exclusion of the studies used

to answer the research question. In this case, a clear definition about what CM, as it contributes to BPD in adults, means and what the scope of this study included and excluded, along with a systematic sampling of the literature and a clear rationale for using specific studies, are the techniques being utilized for safeguarding against threats to external validity.

Threats to Reliability

Measurement in a meta-analysis is achieved as a result of cautious and precise coding of studies. Impreciseness in documenting data extracted from studies, and vague operational definitions for coding categories, are conceivable threats to reliability in the current study. Additionally, since only one researcher performs this study, a conventional inter-rater reliability estimate cannot be calculated. Nevertheless, there is a technique for reporting on intra-rater reliability, and that is to have the single researcher re-code a random subset of "clean" articles later and calculate the ratio of agreement on the categories in the studies as an Agreement Ratio, as follows:

$$AR = \frac{number\ of\ agreements}{number\ of\ studies}$$

The greater the *AR*, the higher the internal reliability estimate. When the total number of studies included in the final meta-analysis is determined, the process for random-sampling and the percentage of studies to be re-coded are computed and reported (Card, 2012). Due to the fact that data gathering and all statistical analyses were conducted by the sole author of this study, the Agreement Ratio statistic was computed and is reported in Chapter 4.

Ethical Procedures

The raw data used in the study were comprised of the published statistical results of prior studies. Studies included in the meta-analysis were reviewed to ensure that commentaries on ethical procedures for the treatment of participants (such as informed consent and confidentiality) were used at the time of the source studies. However, because this study used secondary data as the unit of inquiry and not the use of individual participants, there were no anticipated difficulties in the ethical treatment of research participants. The Walden University Institutional Review Board approved the research plan for this study prior to collecting data.

Summary

The study consisted of a meta-analysis of published research into the relative importance of each form of CM related to the development of BPD in adults. The study was limited to forms of CM with adult participants in studies using group designs. This study was designed to answer the following research question:

> What is the effect size of childhood maltreatment as it contributes to adults diagnosed with BPD?

A calculated plan for identifying relevant studies and coding and extracting data for analysis was portrayed earlier in this chapter. The intended coding classifications incorporated source characteristics, study sample features, design attributes, type of childhood maltreatment, type of treatment utilized, and results. Organization of information obtained from studies and statistical analyses using Comprehensive Meta-Analysis, version 3 (CMA, v3) software (Borenstein, (n.d.) was also illustrated in the Data Analysis Plan section of this chapter.

The planned research proposal might experience small changes as studies are coded and analyzed, and significant factors not thought about previously might surface (Borenstein, Hedges, Higgins, & Rothstein, 2009). When studies have been chosen, coded, data extracted, logged on paper, and then submitted into CMA, v3, the following statistical calculations were performed utilizing the software:

1. Calculation of standardized mean effect sizes for the individual studies, using a random effects model for continuous outcomes. Fisher's Z is the effect size statistic, as this permits for unequal numbers of participants in groups (Borenstein et al., 2007). A 95% confidence interval for each study's standardized mean effect will also be computed.
2. Assessment for heterogeneity of the studies used; since this is a meta-analysis, blending findings from studies incorporating various dependent variables within the overall construct of all CM forms, the studies exhibited heterogeneity and therefore fit the random-effects statistical model being exercised.

In Chapter 4 of the study, all meta-analysis findings were described and interpreted as relating to the original research question about all forms of CM as it contributes to BPD in adults. Additional analyses of possible moderator variables, such as type of CM or mental health treatments, were also initiated based upon developments mentioned in the original effect size calculations of the individual studies and connection to certain qualitative variables previously coded. The findings described in Chapter 4 form the groundwork for conclusions about how all CM forms contribute to BPD in adults and recommendations for future research.

Chapter 4: Results

Introduction

This meta-analytic study was designed to evaluate the significance of each form of childhood maltreatment as it contributes to BPD in adults. Childhood maltreatment includes sexual abuse, physical abuse, emotional abuse, and neglect. Child sexual abuse is a form of child abuse that includes sexual activity with a minor (Wissink, Van Vugt, Moonen, Stams, & Hendriks, 2015). There are numerous forms of child sexual abuse, including but not limited to rape, fondling, sexual assault, exposure, voyeurism, and the commercial sexual exploitation of children. Child physical abuse is defined as purposefully hurting a child, causing injuries such as bruises, broken bones, burns, and cuts (Norman et al., 2012). The definition of childhood emotional abuse is described as emotional maltreatment or emotional neglect of a child and can involve intentionally trying to scare, humiliate, isolate or ignore a child (Slep, Heyman, & Snarr, 2011). Child neglect is explained as a lack of meeting a child's basic needs, including the failure to provide adequate health care, supervision, clothing, nutrition, housing as well as their physical, emotional, social, educational, and safety needs, according to the U.S. Department of Health and Human Services (2007). This study was designed to analyze the comparative significance of each form of childhood maltreatment. It contributes to BPD to distinguish necessary intervention strategies for specific forms of childhood abuse/neglect and should be treated first when children are exposed to more than one form. Effect sizes calculated for CM as part of this meta-analysis highlight the potential for the overall correlation between maltreatment and Borderline Personality Disorder. Therefore, this meta-analysis was designed to answer the following research question:

What is the effect size of childhood maltreatment as it contributes to adults diagnosed with BPD?

Data Collection: Selection and Inclusion of Studies

Using the search criteria described in Chapter 3, 7,400 abstracts were identified for review during electronic database searches conducted from January 1999 through December 2019. Of these, 962 were dissertations, and the remaining 6,438 were published in peer-reviewed journals. Based upon the inclusion criteria for this study, 289 full-text articles were retrieved for further consideration. Two hundred and seventy-six of the papers retrieved were excluded for reasons detailed in the next section; 13 articles remained for inclusion in this meta-analysis and constituted less than 1% of all search results. A flowchart of the meta-analysis literature search and data retrieval process is presented in Figure 1.

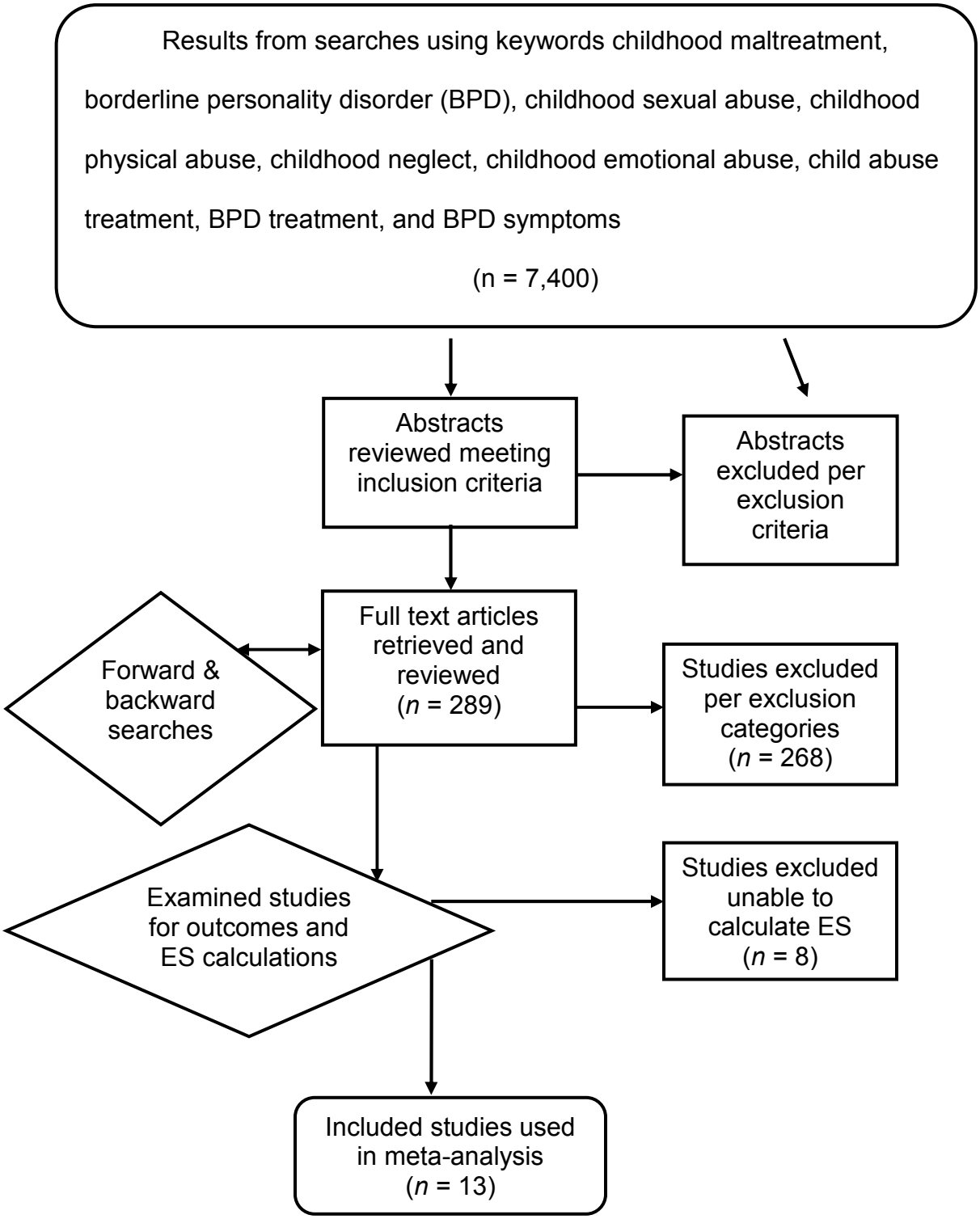

Figure 1. Meta-analysis flowchart.

Characteristics of Excluded Studies and Descriptive Statistics

The reasons for excluding 276 studies initially identified for inclusion were as follows: several of the studies had children or adolescents as the study participants, numerous were qualitative, some were review articles, others met all inclusion criteria but did not provide enough data to compute effect sizes.

Characteristics of Included Studies and Descriptive Statistics

Included studies (n = 13) ranged in publication date from 1999 to 2019. Overall, data used in this meta-analysis are from a total of 4,563 adult participants, of whom 87% experienced childhood physical abuse, 67% childhood sexual abuse, 60% childhood emotional abuse, 86% childhood neglect, and 36% childhood physical neglect. Of those adult participants, 5% experienced abandonment in adulthood, 26% had a BPD diagnosis in adulthood, 63% had BPD symptomology, and 6% experienced affective dysregulation. Table 1 summarizes the forms of maltreatment and the type of BPD construct used in all included studies.

Table 1. Summary statistics for the meta-analysis evaluating the association between child maltreatment and Borderline Personality Disorder

	Number of Effect Sizes	Point Estimate	Standard Error	Lower Limit	Upper Limit	z-value	*p*-value
Correlation	51	.293	--	.232	.353		
Fisher's Z	51	.302	.034	.236	.368		
Model						8.933	<.001

Study Citation	*N*	Forms of Maltreatment	BPD Construct	Fisher's Z	Standard Error	$CI_{95\%}$ Lower Limit	$CI_{95\%}$ Upper Limit	*p*
Allen et al. (2013)	268	Physical Abuse	Abandonment Concerns	0.23	0.06	0.11	0.35	0.00
Allen et al. (2013)	268	Emotional Abuse	Abandonment Concerns	0.33	0.06	0.21	0.45	0.00
Allen et al. (2013)	268	Neglect	Abandonment Concerns	0.20	0.06	0.08	0.32	0.00
Battle et al. (2004)	600	Physical Neglect	Diagnosis	0.89	0.05	0.78	0.99	0.00
Battle et al. (2004)	600	Emotional Withdrawal	Diagnosis	0.65	0.05	0.55	0.75	0.00
Battle et al. (2004)	600	Inconsistent Treatment	Diagnosis	0.45	0.05	0.35	0.56	0.00
Battle et al. (2004)	600	Denial of Feelings	Diagnosis	0.59	0.05	0.49	0.70	0.00
Chesin et al. (2015)	60	Emotional Abuse	Diagnosis	0.41	0.11	0.19	0.62	0.00
Chesin et al. (2015)	60	Emotional Neglect	Diagnosis	0.32	0.11	0.10	0.53	0.00
Chesin et al. (2015)	60	Physical Abuse	Diagnosis	0.24	0.11	0.02	0.46	0.04
Chesin et al. (2015)	60	Sexual Abuse	Diagnosis	0.17	0.11	-0.04	0.38	0.12
Cohen et al. (2014)	231	Sexual Abuse	BPD symptomatology	0.19	0.07	0.06	0.32	0.00
Cohen et al. (2014)	231	Physical Abuse	BPD Symptomatology	0.32	0.07	0.19	0.45	0.00
Cohen et al. (2014)	231	Emotional Abuse	BPD Symptomatology	0.36	0.07	0.23	0.49	0.00
Cohen et al. (2014)	231	Neglect	BPD Symptomatology	0.20	0.07	0.07	0.33	0.00
Ferrer et al. (2017)	204	Emotional Abuse	Diagnosis	0.25	0.09	0.07	0.42	0.01
Ferrer et al. (2017)	204	Sexual Abuse	Diagnosis	0.17	0.09	-0.01	0.34	0.06
Ferrer et al. (2017)	204	Physical Abuse	Diagnosis	0.19	0.09	0.02	0.37	0.03
Ferrer et al. (2017)	204	Emotional Neglect	Diagnosis	0.09	0.09	-0.09	0.26	0.33
Ferrer et al. (2017)	204	Physical Neglect	Diagnosis	0.15	0.09	-0.02	0.32	0.09
Hernandez et al. (2012)	109	Emotional Abuse	Diagnosis	0.37	0.10	0.18	0.56	0.00
Hernandez et al. (2012)	109	Sexual Abuse	Diagnosis	0.17	0.10	-0.02	0.36	0.08
Hernandez et al. (2012)	109	Physical Abuse	Diagnosis	0.24	0.10	0.05	0.44	0.01
Hernandez et al. (2012)	109	Emotional Neglect	Diagnosis	0.22	0.10	0.03	0.41	0.02
Hernandez et al. (2012)	109	Physical Neglect	Diagnosis	0.24	0.10	0.05	0.44	0.01
Johnson et al. (1999)	639	Physical Abuse	BPD symptomatology	0.14	0.04	0.06	0.21	0.00
Johnson et al. (1999)	639	Neglect	BPD symptomatology	0.20	0.04	0.12	0.27	0.00
Krause-Utz et al. (2019)	181	Emotional Abuse	Diagnosis	1.09	0.08	0.94	1.25	0.00
Krause-Utz et al. (2019)	181	Emotional Neglect	Diagnosis	1.01	0.08	0.85	1.16	0.00
Krause-Utz et al. (2019)	181	Physical Abuse	Diagnosis	0.62	0.09	0.45	0.79	0.00
Krause-Utz et al. (2019)	181	Physical Neglect	Diagnosis	0.66	0.09	0.49	0.82	0.00
Krause-Utz et al. (2019)	181	Sexual Abuse	Diagnosis	0.62	0.09	0.01	0.45	0.00
Kuo et al. (2015)	243	Emotional Abuse	BPD symptomatology	0.45	0.06	0.32	0.57	0.00
Kuo et al. (2015)	243	Sexual Abuse	BPD symptomatology	0.11	0.06	-0.02	0.24	0.09
Kuo et al. (2015)	243	Physical Abuse	BPD symptomatology	0.13	0.06	0.00	0.26	0.04
Lobbestael et al. (2010)	409	Sexual Abuse	BPD symptomatology	0.42	0.05	0.33	0.52	0.00
Lobbestael et al. (2010)	409	Physical Abuse	BPD symptomatology	0.34	0.05	0.25	0.44	0.00
Lobbestael et al. (2010)	409	Emotional Abuse	BPD symptomatology	0.45	0.05	0.35	0.54	0.00

Lobbestael et al. (2010)	409	Emotional Neglect	BPD symptomatology	0.41	0.05	0.31	0.51	0.00
Lobbestael et al. (2010)	409	Physical Neglect	BPD symptomatology	0.16	0.05	0.06	0.26	0.00
Martin-Blanco et al. (2014)	130	Emotional Abuse	BPD symptomatology	0.19	0.09	0.02	0.37	0.03
Martin-Blanco et al. (2014)	130	Sexual Abuse	BPD symptomatology	0.08	0.09	-0.09	0.25	0.37
Martin-Blanco et al. (2014)	130	Physical Abuse	BPD symptomatology	0.07	0.09	-0.10	0.24	0.43
Martin-Blanco et al. (2014)	130	Emotional Neglect	BPD symptomatology	0.12	0.09	-0.05	0.29	0.17
Martin-Blanco et al. (2014)	130	Physical Neglect	BPD symptomatology	0.12	0.09	-0.05	0.29	0.17
Paris et al. (2009)	1196	Neglect	BPD symptomatology	0.13	0.04	0.06	0.19	0.00
Paris et al. (2009)	1196	Physical Abuse	BPD symptomatology	0.10	0.04	0.03	0.17	0.01
Paris et al. (2009)	1196	Sexual Abuse	BPD symptomatology	0.09	0.04	0.02	0.16	0.01
Westbrook & Berenbaum (2017)	293	Emotional Abuse	Affective Dysregulation	0.17	0.06	0.06	0.29	0.00
Westbrook & Berenbaum (2017)	293	Physical Abuse	Affective Dysregulation	0.00	0.06	-0.12	0.12	1.00
Westbrook & Berenbaum (2017)	293	Sexual Abuse	Affective Dysregulation	-0.11	0.06	-0.23	0.00	0.06

Statistical Calculations and Software Used

Given that there were a variety of sub-analyses within studies included in the meta-analysis, all results reported are based on random effects models, which allow the true effect size to vary across studies (Boronstein, Hedges, & Rothstein, 2007). As different studies used different methodologies, resulting in different statistics within each, all data extracted were converted to Fisher's Z prior to aggregating across them. Analyses were weighted by the sample size within each study. All analyses, including the data transformations and calculation of results reported below, were conducted using Comprehensive Meta-Analysis, Version 3 (Borenstein, Hedges, Higgins & Rothstein, n.d.).

The Q-statistic, which tests the hypothesis that all coefficients are equal to zero, was $Q(50) = 733.65$, $p < .001$. Thus, the hypothesis that coefficients equal zero should be rejected, indicating support for the alterative hypothesis that coefficients are different than zero. Table 1 contains summary statistics for the meta-analysis. As can be seen in the table, the overall correlation between maltreatment and Borderline Personality

Disorder is positive and medium range, according to Cohen's (1992) conventions. In other words, aggregating across studies that examined presence or absence of maltreatment, a continuous measure of maltreatment, presence or absence of Borderline Personality Disorder, and continuous measures of Borderline Personality Disorder symptomatology, a correlation in the moderate range emerged. It is also worth noting that for all studies identified, each one reported a positive and significant association.

Decisions regarding software selection were based upon appropriateness to the research question, reviews of meta-analysis literature to identify reliable software widely accepted by the scientific community, ease of use, and financial expense to the researcher. The primary management of study references, calculation of effect sizes, and evaluation of risk of bias was conducted using the Comprehensive Meta-Analysis, version 3 (CMA, v3) program (Borenstein, Hedges, Higgins, & Rothstein, n.d.). The overall standardized mean effect size for CM as it contributes to BPD in adults was Fisher's Z = 0.34, 95% CI [236, 368], $z = 8.933$ ($p < .001$), supporting a medium effect for CM as it contributes to BPD in adults.

Summary of Results

The answer to the research question of this study, based upon the results obtained in this meta-analysis, is as follows:

What is the effect size of CM as it contributes to adults diagnosed with BPD?

Effect sizes for CM as it contributes to BPD in adults, calculated as standardized mean effects using Fisher's Z ranged from 95% CI [236, 368], $z = 8.933$ ($p < .001$), supporting a positive and medium effect for CM as it contributes to BPD in adults, according to Cohen's (1992) conventions. In other words, aggregating across studies that

examined presence or absence of maltreatment, a continuous measure of maltreatment, presence or absence of Borderline Personality Disorder, and continuous measures of Borderline Personality Disorder symptomatology, a correlation in the moderate range emerged. It is also worth noting that for all studies identified, each one reported a positive and significant association.

In Chapter 5, a more vigorous interpretation of the results will be presented including comments about underlying issues related to CM as it contributes to BPD in adults and treatment for children who experience CM. The limitations of this study will be presented as well as suggestions for new research in the use of various treatments for CM as well as treatment for BPD in adults. Specific needs for further research in this area will be highlighted, along with some suggestions for mental health clinicians in utilizing a range of mental health treatments as part of their own practices, outside of the research setting. The utility of meta-analyses for clinicians in understanding evidence-based practices in mental health will also be discussed.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this meta-analysis was to evaluate the significance of each form of childhood maltreatment (CM) as it contributes to Borderline Personality Disorder (BPD) in adults. Since a meta-analytic approach was used, an additional purpose of the study was to identify possible moderators of type of CM or type of BPD construct that affected the overall effect size estimate for CM. The results of this meta-analytic study of CM as it correlates to BPD in adults was positive and medium range. Collecting data across studies that assessed presence or absence of maltreatment, a continuous measure of maltreatment, existence or non-existence of Borderline Personality Disorder, and continuous measures of Borderline Personality Disorder symptomatology, identified a positive and significant association. There was heterogeneity in the sizes of included studies, ranging from 60 participants in the Chesin et al. (2015) study using the roles of rejection sensitivity (RS) and childhood emotional neglect and abuse (ENA) as well as their interaction in BPD to 1196 participants in the Paris et al. (2009) study measuring documented cases of childhood physical and sexual abuse and neglect that were at elevated risk of BPD in adulthood. In addition, there was variability in the BPD constructs. For example, several studies focused on CM and BPD symptomatology, but outcome measures included highly reliable and validated instruments such as ACE and BPD checklist. Thus, despite using a statistical method to allow for comparisons between measures with different underlying numeric scales (computation of the standardized mean difference), the qualities of each measure must also be considered in the analysis of all data. Just as a clinician cannot rely on symptom checklists alone when evaluating a

patient, the user of meta-analytic results cannot rely solely upon the computed effect sizes. The risk of bias in each study, such as using unreliable measures, or nonrandom assignment to groups, constitutes a meaningful qualitative framework to interpret the meta-analysis better.

Similar to Chapter 4, I structured the discussion in Chapter 5 to consider the overall effects found, effects according to the meta-regression of all forms of CM and BPD symptomology and diagnosis in adults. Subsequently, I will discuss the limitations of the present study regarding the validity and generalizability of the findings. I will also discuss recommendations for future research, the implications of this study within the context of positive social change, and potential ramifications for effective treatments for all forms of CM and interventions for BPD in adults.

Interpretation of the Findings

Meta-analysis is one way to evaluate the utility of treatments to populations with specific treatment needs. The conclusions of any meta-analysis are limited by the research design; for this meta-analysis, the data points used result from group clinical trials of CM and BPD in adults as published in electronic form in particular databases. Although I thoroughly searched for studies meeting inclusion criteria, there is the possibility that important studies were not located, even though publication bias was not evident.

Further, all interpretations of effect sizes are made considering the underlying risk of bias in the studies used. Possible sources of bias coded as present or absent for all included studies in this meta-analysis were as follows:

1. Nonrandom assignment to conditions

2. Nonblinding of personnel
3. Non-standardized outcome assessment
4. Selective reporting of results

A later section in Chapter 5 is dedicated to the risk of bias and ways to lessen bias inherent in meta-analysis in general and this study.

Overall Findings for CM as it contributes to BPD in Adults

The overall standardized mean effect size for CM as it contributes to BPD in adults was Fisher's Z = 0.34, 95% CI [236, 368], $z = 8.933$ ($p < .001$), supporting a medium effect for CM as it contributes to BPD in adults. The Q-statistic, which tests the hypothesis that all coefficients are equal to zero, was $Q(50) = 733.65$, $p < .001$. Thus, the hypothesis that coefficients equal to zero should be rejected, indicating support for the alternative hypothesis that coefficients are different from zero. The overall correlation between maltreatment and Borderline Personality Disorder is a positive and medium range, according to Cohen's (1992) conventions. The numeric value of the effect size is customarily interpreted according to Cohen's (1992) categories of small, medium, and large. In other words, aggregating across studies that examined presence or absence of maltreatment, a continuous measure of maltreatment, presence or absence of Borderline Personality Disorder, and continuous measures of Borderline Personality Disorder symptomatology, a correlation in the moderate range emerged. It is also worth noting that each one reported a positive and significant association for all studies identified.

Although CM has been consistently found in the past to be highly correlated to BPD in adults, to my knowledge, this is the first meta-analysis of CM as it contributes to BPD in adults with CM as the dependent variable. Although conclusions from this overall

effect cannot be drawn comparing specific types of CM as causation for BPD in adults, these findings provide evidence that all CM forms contribute to BPD in adults.

Meta-Regression

Meta-regression. Once an overall meta-analysis has been conducted, results from included studies can be further analyzed to evaluate potential moderator variables. One way to accomplish this type of post-hoc analysis is through use of meta-regression. This statistical procedure allows for comparison of studies grouped by a categorical variable in terms of predictive power to the continuous variable of effect size (Steichen, 2004). One possible moderator in the current study was a type of CM or type of treatments for CM and BPD that could affect the overall effect size estimate for CM. The results of the meta-regression, presented in Chapter 4, supported the identification of certain forms of CM analyzed that had a higher likelihood of contributing to BPD in adults than other forms of CM as a significant predictor of effect size.

Mental Health Outcomes

A link has been identified between childhood emotional abuse, childhood physical abuse, childhood sexual abuse, childhood neglect, and BPD. Experiences of childhood abuse or neglect, problematic family environment, as well as low socioeconomic status are significant risk factors for the development of BPD. If identified early on, this would ideally reduce the BPD symptoms from developing within childhood, eventually leading to BPD in adulthood. It could ensure children get the most appropriate treatment early on in childhood to decrease the possibility of developing adult pathology. This research could also benefit adults by identifying elements and underlying issues that led to BPD development. Additionally, it could educate adults diagnosed with

BPD on the behaviors, stressors, and risk factors that led to BPD so they will not repeat the cycle with their children. Constantino (2016) expressed that there are strengths and weaknesses of different types of interventions, and identifying gaps in knowledge could lead to improved programs.

Treatment and Prevention for Childhood Maltreatment

The outcome of this study had positive social implications in that identifying how each form of childhood maltreatment contributes to BPD may improve the effectiveness of mental health treatment for children by focusing on which form of childhood abuse should be treated first and foremost. Multiple forms of interventions have been identified for the various types of childhood maltreatment, and there is evidence that several factors might determine treatment outcomes. Therapy techniques might be more successful when tailored to the child or young person's individual needs, taking into account their specific symptoms, development, context, and background (Harvey & Taylor, 2010). Even though the experience of child abuse or neglect cannot be changed once it has occurred, relationships can be strengthened through clinical interventions (Theran & Han, 2013). Several treatment options for childhood maltreatment include, but are not limited to, trauma-focused cognitive-behavioral therapy (TF-CBT), alternatives for families cognitive-behavioral therapy (AF-CBT), relaxation training, and social skills training, which will all be discussed in this section. Treatment should always be abuse/neglect focused on helping the child acclimate to the occurrence of having been abused, it should consist of an educational piece, it should focus on the child's relationship with other family members, and it should deal with the non-offending and offending caregivers as well as the child (Kolko & Swenson, 2002; Hensler, Wilson, & Sadler, 2004).

Trauma-Focused Cognitive-Behavioral Therapy (TF-CBT)

Although every child who experiences a traumatic event does not always have trauma symptoms, trauma is frequently thought to be toxic to development. When traumatic events start in childhood, a child's developmental path could be substantially transformed ((Wamser-Nanney & Vandenberg, 2013). Numerous children prove to be resilient and have the capacity to flourish and succeed even when they have experienced multiple stressors (Leckman & Mayes, 2007; Little & Akin-Little, 2013; Little, Akin-Little, & Somerville, 2011). Trauma-focused cognitive-behavioral therapy (TF-CBT) is the best-supported treatment for children with childhood maltreatment, regardless of the number of sessions (Deblinger, Mannarino, Cohen, Runyon, & Steer, 2011; Leenarts, Diehle, Doreleijers, Jansma, & Lindauer, 2013). TF-CBT is a short-term treatment that encompasses individual sessions with children and parents as well as joint parent-child sessions. It successfully addresses and enhances children's affective response, behavioral functioning and reactions, thinking patterns to the abuse, safety skills, and parenting skills. Even though the consequences of childhood maltreatment can be exhibited in several forms, childhood maltreatment is a risk factor for the development of antisocial, violent, and aggressive behavior. There is distinct evidence that all forms of childhood maltreatment are related to an increased pervasiveness of mental health problems such as anxiety, posttraumatic stress, depression, suicidal ideation, substance abuse, and personality disorders. Chronic childhood maltreatment is linked with disruptions mostly in affective and interpersonal self-regulatory competencies (Deblinger et al., 2011; Leenarts et al., 2013).

Alternatives for Families – Cognitive Behavioral Therapy (AF-CBT)

Alternatives for Families: A Cognitive Behavioral Therapy (AF-CBT) is an evidence-based treatment (EBT) for family conflict, coercion, aggression, and child physical abuse that was recognized by the National Child Traumatic Stress Network (Kolko, Iselin, & Gully, 2011). Empirical support has been found in studies of families for AF-CBT presenting with child physical abuse (Kolko, 1996a, 1996b; Kolko et al., 2011) and child behavior disorders (Kolko, Campo, Kelleher, & Cheng, 2010; Kolko, Dorn, et al., 2009). A RCT with abused and maltreated children found AF-CBT had greater effectiveness in numerous child areas, including fewer externalizing symptoms, normalization of children's responses, altering maladaptive thoughts, and diminished parent-to-child violence risk compared to community parent training groups (Vickerman & Margolin, 2007). Those children and families who do not obtain interventions to enhance family functioning and decrease the risk of physical abuse could be predisposed to long-term negative outcomes, such as the cycle of physical abuse, use of excessive discipline techniques, emotional/behavioral difficulties, aggressive behaviors, and insufficiencies in social skills for children (Thabet & Vostanis, 2000). For that reason, it is essential to provide effective treatments to families subjected to these impediments.

Relaxation Training

Relaxation training is employed as an intervention by dealing with the child's fear or anxiety reactions to abuse-related cues allowing them to select helpful behaviors to deal with their situation and facilitate more successful affect regulation (De Arellano et al., 2005). It was helpful for children to utilize a personalized relaxation cassette outside the therapy sessions (King et al., 2000). This method involves educating the child on a few relaxation techniques consisting of deep/diaphragmatic breathing exercises, guided

imagery, and progressive relaxation. Empirical evidence defends the effectiveness of relaxation training in treating numerous clinical conditions such as headaches, asthma, and anxiety (Chiang, Ma, Huang, Tseng, & Hsueh, 2009; Hashim & Zainol, 2015) in children and adolescents. Individuals who utilize relaxation techniques often and regularly have a higher likelihood of benefitting from them (De Arellano et al., 2005).

Social Skills Training

Social skills are the specific behaviors that an individual exhibits to perform competently on a social task (e.g., active listening skills, reciprocal communication, ignoring, etc.) (Holosko, 2015).

Social skills training helps the child cope with coping strategies to help them handle negative emotions and enhance their social and interpersonal functioning. Research indicates that social skills are closely linked to social development, and negative social consequences can continue if specific social behaviors are not acquired (Dogan et al., 2017). Studies have recurrently illustrated that children with insufficient social competence are at greater risk for poor school adjustment and adult psychopathology than socially competent children. Children with poor social skills are frequently raised in dysfunctional families, whereas family members feel isolated and react to each other in a passive, ineffective manner (Webster-Stratton & Reid, 2010).

Limitations of the Study

This meta-analytic study is limited by all possible limitations inherent in any meta-analytic study. These include heterogeneity of size and type of intervention, differences in participant groups used in the interventions, comparison of many different outcome measures, publication bias, etc. The overall results must be cautiously

interpreted based on the studies' structure comprising the data points used for calculations. However, the limitations of meta-analysis can also be considered strengths. From this study, we can draw some tentative conclusions about how all forms of childhood maltreatment contribute to BPD in adults precisely because the data points represent studies of all types of CM, symptomology of BPD in adults, treatments for CM, and interventions for BPD. We can infer that treatment for CM has some effectiveness in limiting BPD in adulthood, and further research appears worthwhile.

Generalizability

Inclusion criteria for this study were chosen to include as many studies as possible reflecting CM as it contributes to BPD in adults. The broad inclusion criteria increased the possibility of heterogeneity among included studies and thus the possibility that the outcomes being measured could not be compared appropriately. This difficulty in meta-analysis is known as the “apples and oranges problem,” combining results derived from studies with disproportionate research goals, methods, and techniques (King & He, 2005). It is debated that meta-analysis could sometimes be comparable to taking apples and oranges and averaging such measures as weights, sizes, flavors, and shelf lives (Hunt, 1997). This problem is not significant when we want generalizable results to the future or a broad research area. Very expansive inclusion criteria for a meta-analysis will produce generally applicable and informational outcomes than instructive. Since there is limited literature on how CM contributes to BPD in adults, this meta-analysis was purposefully designed to be as inclusive as possible. This study's findings support that all forms of childhood maltreatment contribute to BPD in adults, with emotional abuse and emotional neglect ranking the highest.

Validity

The validity of a meta-analysis relies on thorough attention to design, conduct analysis, and reporting, as is the validity of any other scientific study. Careful consideration and clear documentation of the research question, procedures, assumptions, and methods, accompanied by profound analysis, will help secure high-quality meta-analyses that are credible (Möser, 2006). As per the commonly recognized parameters for meta-analysis, validity concerns in this study have been attended to evaluate the risk of bias in each study used (Borenstein, 2009). The meta-analysis results might be considered valid only as the underlying design and results calculations for included studies were valid. The qualitative evaluation of the risk of bias of each included study generated significant data about possible threats to validity. The most common risks for bias found were non-random assignment to conditions, non-blinding of personnel, non-standardized outcome assessment, and selective reporting of results. This implies that although the meta-analysis results were statistically significant, there were some underlying limitations in study design in many cases. Studies that integrate blinding of personnel and the use of standardized instruments should be used to increase confidence in the internal validity of the results.

Reliability

This study's internal consistency reliability was calculated using an intra-rater reliability estimate based on a random sample of included studies. Reliability was very high, despite the complexity of the decisions needed in choosing outcome data for each study. Reliability in future meta-analyses could be improved by having more than one rater and having a more homogeneous selection of studies. For example, if all studies

included measuring the outcome using similar instruments, reliability should be improved. Nevertheless, for the stated goals of this study and its recognized limitations, the reliability of the results overall is very good.

Recommendations

The overall results from this meta-analysis suggest that all forms of CM contribute to BPD in adults. It may be particularly effective in identifying how each form of childhood maltreatment contributes to BPD to improve the effectiveness of mental health treatment for children by focusing on which form of childhood abuse should be treated first and foremost. Multiple forms of interventions have been identified for the various types of childhood maltreatment, and there is evidence that several factors might determine treatment outcomes. Therapy techniques might be more successful when tailored to the child or young person's individual needs, taking into account their specific symptoms, development, context, and background (Harvey & Taylor, 2010).

Future Research

Despite the compilation of results from 13 studies to conduct this meta-analysis, there remain many unanswered questions for future research. How can trauma-focused cognitive-behavioral therapy (TF-CBT), alternatives for families cognitive-behavioral therapy (AF-CBT), relaxation training, and social skills training be adapted for use with diverse client populations? What specific training is needed for therapists to develop competence in these treatments? How many sessions of TF-CBT, AF-CBT, relaxation training, and social skills training are needed to produce a change in the short-term, and what is the needed dose of those treatments for change in the long term? Is one intervention more successful than others depending on the form of childhood

maltreatment suffered? More studies are needed in order to answer these questions. A future meta-analysis of these interventions was most efficient in working with the various forms of childhood maltreatment, especially emotional abuse and emotional neglect, as those forms yielded the highest effect sizes in this meta-analysis. Future research should be done to identify if these treatments effectively prevented BPD symptomology in adulthood after experiencing childhood maltreatment and what interventions for BPD were most beneficial for individuals who suffered childhood maltreatment trauma.

In addition, there may be important participant variables to consider when determining which intervention has the best mental health outcomes. What specific client characteristics predict success using TF-CBT, AF-CBT, relaxation training, and social skills training? Are there differences between younger and older children in their acceptance of these treatments in a therapy setting? Future research into all of these areas may serve as data to support (or not support) TF-CBT, AF-CBT, relaxation training, and social skills training as evidence-based mental health practice to greatly reduce or completely diminish BPD symptomology in adulthood. Even though the experience of child abuse or neglect cannot be changed once it has occurred, relationships can be strengthened through clinical interventions (Theran & Han, 2013).

Implications

Positive social change. Decreased psychological symptoms and improved mental health benefits individuals, families, and the greater society. With a reduction of mental health symptoms, individuals can have an improved quality of life and be productive, inspired, motivated, and functional members of society. Evaluating mental health

interventions contributes to positive social change. It assists with identifying practices that help people function better, which creates a sense of safety for the public overall.

Conclusion

Childhood trauma is very common in Borderline Personality Disorder (BPD) subjects and is the main environmental element in BPD development (Martín-Blanco et al., 2014). Trauma-Focused Cognitive-Behavior Therapy (TF-CBT), Alternatives for Families - Cognitive Behavioral Therapy (AF-CBT), relaxation training, and social skills training are potentially useful interventions for children who have endured childhood maltreatment and have difficulty with social, emotional, and psychological development as well as the ability to foster and sustain interpersonal relationships. This study employed a meta-analytic strategy to explore how the relative importance of all forms of childhood maltreatment contributes to BPD in adults, treatments for CM, interventions for BPD, as well as the examination of the potential moderating effects of the type of CM and the type of BPD symptomology being measured. The finding of overall effect size for CM as it contributes to BPD in adults of 0.34 supports a medium effect. Balancing this medium effect with multiple forms of interventions for both CM and BPD in adults should persuade patients and therapists to recognize the benefits of therapy.

Several psychotherapeutic approaches have been demonstrated to be effective in the treatment of adults to help manage symptoms of BPD, such as cognitive behavioral therapy (CBT), schema-focused therapy (SFT), and dialectical behavior therapy (DBT), and pharmacotherapy (O'Connell & Dowling, 2014). These theoretical orientations help individuals recognize and modify core beliefs and behaviors that cause inaccurate perceptions of themselves and others, decrease impulsivity, learn skills to control intense

emotions/emotion regulation, reduce self-destructive and suicidal behaviors, and improve relationships through mindfulness and acceptance or being aware of and attentive to the current situation and emotional state (Fassbinder, Schweiger, Martius, Wilde, & Arntz, 2016; National Institute of Mental Health (NIMH), 2011; Neacsiu & Linehan, 2014). Additional research into all forms of CM as it contributes to BPD is warranted. An emphasis on using standardized measures to evaluate outcomes will be important in analyzing results for validity and reliability.

Advances in the competency and training of therapists to help identify which interventions are most effective in working with children who have experienced various forms of childhood maltreatment could be practical and beneficial to not only these children but society as these children reach adulthood. It is imperative that service providers and policymakers identify practices to strengthen and restructure fragmented service delivery procedures so that maltreated children and families can access crucial services (Luthar & Brown, 2007). If identified early on, this would reduce the BPD symptoms from developing within childhood, eventually leading to BPD in adulthood. It could also theoretically benefit adults by identifying elements and underlying issues that led to BPD development. Additionally, it could educate adults diagnosed with BPD on the behaviors, stressors, and risk factors that led to BPD so they will not repeat the cycle with their children. There are strengths and weaknesses of different interventions, and identifying gaps in knowledge could lead to improved programs. Future research may be indicated in terms of matching specific types of CM to specific trauma focused therapy.

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Appendix A: Coding Categories

SOURCE CHARACTERISTICS

- Article # - Code from 1 to X
- Author(s) citation
- Year of publication – Code XXXX
- Publication title
- Type of study/report
    1. Primary qualitative research (exclusion criterion)
    2. Primary quantitative research
    3. Systematic review
    4. Meta-analysis
    5. Theoretical treatise or opinion paper
    6. Other (describe)
- How article found
    1. Database search key terms
    2. Forward searching (cited by)
    3. Backward searching (reference list)
    4. Other source (describe)

STUDY SAMPLE CHARACTERISTICS

- Participants
    1. Total number of participants
    2. Gender (If both indicate n of each)
    3. Adult? (Yes if 18 years of age or older; if no, exclusion criterion)
    4. Age range
    5. Ethnicity
    6. Clinical diagnosis?
    7. History of prior treatment?

DESIGN CHARACTERISTICS

- Design
    1. Single Subject (exclusion criterion)
    2. Group
- Setting
    1. Outpatient clinic/research center

2. Therapist's office
3. Residential treatment
4. Home
5. Correctional institution
6. Other (name)

- IV (Type of BPD Symptomology)
  1. Identity diffusion
  2. Excessive self-criticism
  3. Insecurity and real or imagined abandonment/rejection
  4. Distorted reality
  5. Chronic feelings of emptiness and worthlessness
  6. Instability in goals, jobs, values, relationships
  7. Intense Anger
  8. Impulsivity
  9. Mood swings
  10. Other (identify)

- DV (Type of Childhood Maltreatment)
  1. Sexual abuse
  2. Physical abuse
  3. Emotional abuse
  4. Neglect

- Type of measure used for DV
  1. Self-report measure/devised for study (name/describe)
  2. Norm-referenced self-report measure (name/describe)
  3. Therapist rating/devised for study (name/describe)
  4. Peer/other rating/devised for study (name/describe)
  5. Norm-referenced measure completed by therapist or other (name/describe)

- Length of treatment
  1. Number of sessions
  2. Number of weeks

RESULTS

- Results per DV
  1. Fisher's Z
  2. Standard error
  3. Confidence interval (lower limit and upper limit)
  4. P value
  5. Number of participants in group

STUDY QUALITY CHARACTERISTICS

- Report of treatment fidelity included?
- Participants blind to condition?
- Reliability of measure reported?
- Validity of measure reported?