THE EFFECT OF EXPRESSIVE THERAPIES ON
REFUGEE CHILDREN AND ADOLESCENTS: META-ANALYTIC FINDINGS

by

Brian Kristopher Cambra

Liberty University

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree

Doctor of Education

School of Behavioral Sciences

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ABSTRACT

Millions of displaced families are seeking refuge in countries that are not their own due to war, violence, persecution, political unrest, and natural disasters. This global crisis is forcing researchers and practitioners to consider how refugees are coping with trauma associated with their migration process. Effective therapeutic approaches are needed in a global effort to address the traumatic impact of forced migration. This meta-analytical study investigates the effectiveness of expressive therapeutic modalities, including play, art, music, sandplay, theatre, and writing therapies, in helping children and adolescents cope with refugee trauma. A theoretical understanding of the neurobiological and human ecosystemic frameworks conceptualizes both the impact of trauma on human development and the appropriate responses to this impact. These frameworks motivate this study’s exploration of expressive therapies. Seventeen pre-post and between group comparison studies were analyzed using a random effects model. The combined effect size for pre-post comparisons was medium (g = 0.58); whereas the combined effect size for between-group comparisons was small (g = 0.32). Overall, art therapy was found to be most effective in treating stress symptoms. Heterogeneity tests, however, suggest effect sizes cannot be interpreted meaningful due to substantial variance. Nevertheless, findings of this meta-analysis indicate that expressive therapies may be among beneficial modalities to integrate with other trauma-informed approaches.

Keywords: Refugees, forced migration, expressive therapies, trauma, meta-analysis
Dedication

I dedicate this work to the millions of displaced people in the world who have lost their home and loved ones due to geopolitical unrest, persecution, and natural disasters. My prayer is that Christians would be mobilized globally to demonstrate the love and compassion of Christ and help you recover from the trauma caused by forced migration. I expressly dedicate this work to the 8-year-old Syrian refugee boy I met in South Lebanon. Your testimony of resiliency and dedication to follow Christ at all costs surpass the collective value of this study in helping me understand refugee trauma.
Acknowledgements

First and foremost, I thank my Lord and Savior, Jesus Christ, in whom all my strength and purpose rest. I acknowledge that He is the ultimate solution to all trauma. Without His intervention, the impact of trauma persists. He is also the author and designer of expressive therapies, as demonstrated by the complete healing that comes through His expressive love on the cross. I also thank my wife and children for their love, support, and patience as I engaged in this research. Finally, I thank my Chair, Dr. Daniel Marston, and Reader, Dr. Jamie Kenney, for their faithful feedback throughout my writing process.
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<td>Cognitive Behavioral Therapy</td>
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<td>CI</td>
<td>Confidence Interval</td>
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<td>Multiphase Model of Psychotherapy</td>
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CHAPTER ONE: INTRODUCTION

Overview

In presenting a meta-analytical study on the effect of expressive therapies on refugee children and adolescents, it is first important to situate the topic within the framework of its background and significance. This chapter, therefore, is dedicated to orientating the reader to the current global refugee crisis and relevant issues impacting forced migration. In doing so, a problem statement is articulated to motivate the focus and scope of this dissertation’s research question. Understanding the background to the problem and the purpose of this study help shape the overall significance of this meta-analysis that will benefit individuals and organizations working with children, adolescents, and families who have been impacted by refugee trauma.

Background

Studies have found that refugees have more mental health issues compared to non-refugee populations (Hadfield, Ostrowski, & Ungar, 2017). Forcibly displaced children and families are prone to post-traumatic stress disorder (Silove, Tay, Kareth, & Rees, 2017), depression (Lambert & Alhassoon, 2015), and anxiety disorders (Gormez et al., 2017). Hodes (2000) found that refugee children and youth are more disposed to difficulties in peer relationships, hyperactivity, and general mental health issues. Nevertheless, past studies have also found that refugees are less likely to manifest symptoms associated with complex post-traumatic disordered compared to victimized populations, such as childhood abuse (ter Heide, Mooren, & Kleber, 2016). Yet, although specific criteria in diagnosing complex post-traumatic stress disorder may not be met, unique trauma-related symptoms and factors are important to consider when assessing intervention strategies for victims of forced migration. These
considerations related to forced migration should shape the type of treatment strategies offered to families impacted by refugee trauma.

The effects of refugee trauma on children and adolescents is especially worthy of consideration. General stress and trauma associated with relocation is exacerbated when interconnected with the sudden and traumatic flight from the country of origin. Children may encounter detrimental traumatic experiences in the pre-migration stage, including war, conflict, starvation, physical beatings, rape, and witnessing killings (Bemak & Chi-Ying Chung, 2017). These traumatic experiences directly affect the extent of adjustment in the post-migration and settlement phase of forced migration; the children are attempting to cope with past stressors in a climate that frequently imposes further stress. Gormez et al. (2017), for example, considered the extent in which witnessing the death of a loved one in the pre-migration stage directly impacted the post-migration adjustment process among children who fled from Syria to Turkey. The authors found that experiencing cruelty in the pre-migration phase increases the likelihood that children will manifest PTSD symptoms and anxiety in post-migration. This specific type of pre-migration trauma may influence the effectiveness of treatment approaches in the post-migration stage.

Furthermore, the children’s parental support systems are violently disrupted in the post-migration stage, thereby impacting the coping process. Children may be separated from their parents due to mortality or migration issues. Yet, even when family systems remain intact, the parents have typically encountered the similar pre-migration stressors that their children experienced, meaning that the parents are unable to effectively help their children deal with the migration trauma (Björn, Bodén, Sydsjö, & Gustafsson, 2013). The parents themselves are forced to cope with refugee stress as they adjust to traumatic experiences and settlement issues.
The result is a family system that has been depleted of many coping mechanisms. Family factors are of special importance in the post-arrival stage, as parents may feel obligated to implement new parenting styles that are more appropriate in the culture of settlement. This parental adjustment creates additional stressors in both parents and children who are attempting to cope from pre-migration trauma while assimilating to a post-migration life (Lewig, Arney, & Salveron, 2010).

Past research has identified three primary phases in the displacement process as a means to understand refugee traumatic experiences: pre-migration, transit, and post-migration (Hall & Olf, 2016). Specific mental health issues are unique to each stage. Bush, Abrams-Muruthi, Bohon, and Kim (2017), for example, emphasize that acculturation issues in the post-migration stage pose unique stressors for immigrant families; this stress is exacerbated when interconnected with the sudden and traumatic flight from the country of origin. Furthermore, mechanisms that help children and families cope with trauma are unique to each stage. Analyzing the effectiveness of therapeutic responses to refugee trauma, therefore, should be understood in the context of these migration phases. Due to their relevance to this meta-analytical study, the pre-migration and post-migration phases are briefly described below.

**Pre-migration Issues**

The extent in which refugee families cope with migration may be linked with the victims’ pre-migration experiences (Beiser, 2009). Some studies have sought to identify pre-migration trauma as a predictor to resiliency and coping in post-migration. In acknowledging specific traumatic phases in displacement, Bemak and Chi-Ying Chung (2017) note that refugees confront detrimental situations in the pre-migration phase, including war, conflict, starvation, physical beatings, rape, and the witness of killings, that directly impact the extent of adjustment.
in post-migration. Therefore, a theoretical model attempts to predict how the extent and type of these experiences will impact the post-migration phase. Likewise, Knezevic and Olson’s (2014) phenomenological approach to conceptualizing refugee traumatic experiences emphasizes the importance of understanding pre-migration in order to effectively understand post-migration resiliency.

In investigating the effects of pre-migration trauma, Gormez et al. (2017) specifically considered posttraumatic stress disorder and anxiety disorder in Syrian children who were forced to flee to Turkey due to persecution in their home country. In understanding the formation and manifestation of PTSD and anxiety in these children, demographic data related to pre-migration experiences were evaluated. Pre-migration trauma, such as a death of an important person or being exposed to cruelty, impacted the extent of PTSD and anxiety-related symptoms. Assessing post-migration adjustment should therefore be understood in the light of pre-migration trauma. Specific approaches and models to therapy should seek to conceptualize post-migration resiliency by allowing the refugees’ experiences to shape the treatment (Hadfield et al., 2017).

Understanding the impact of pre-migration trauma for the purpose of assessing its effect on post-migration adjustment is also helpful when considering gender differences. A study among Iraqi Yazidis refugees who were displaced into Turkey, for example, found that women reported having experienced more traumatic events (witnessing the death of a child or spouse) compared to men (Tekin et al., 2016). Furthermore, the study found that more women were diagnosed with PTSD and depressive symptoms compared to men. Men, on the other hand, reported more feelings of isolation as an associated symptom of PTSD. The study testifies to the importance of understanding how gender differences impact pre-migration traumatic experiences as they potentially relate to psychological effects during the post-migration adjustment.
Furthermore, the study highlights the importance of assessing post-migration issues in the context of pre-migration experiences.

**Post-migration Issues**

Whereas the extent of pre-migration trauma is typically assumed to be an influential variable that impacts post-migration adjustment, interacting post-migration variables have been more thoroughly explored (Silove, Sinnerbrink, Field, Manicavasagar, & Steel, 1997). Pieloch, McCullough, and Marks (2016), for example, conducted a research review that identified post-migration factors that influence the formation of resiliency among refugee children. Individual, family, school, community, and societal factors were specifically explored and categorized based on 20 years of research. The article grouped resiliency factors into six categories: community-level, society-level, family-level, school-level, individual-level, and basic needs. The extent in which the children have access to these factors predicts the extent of resiliency that they will form in the post-migration phase. The importance of these interactive social mechanisms testifies to the ecological complexities associated with refugee trauma (Silove et al., 2017).

Post-migration issues can potentially exacerbate mental health issues during the settlement process (Marshall, Schell, Elliott, Berthold, & Chun, 2005). These factors include: societal factors, accessibility to services, peer factors, school factors, and family factors (Hadfield et al., 2017). Family factors are of special importance in the post-arrival stage, as parents may feel obligated to implement new parenting styles that are more appropriate in the culture of settlement. This parental adjustment creates additional stressors in both parents and children who are attempting to cope from past pre-migration trauma while assimilating to a post-migration life (Lewig et al., 2010). Ongoing psychological adjustments in the post-migration phase are also influenced by language, employment, education, racism, and changes in family
dynamics (Bemak & Chi-Ying Chung, 2017). Furthermore, many refugee families may perceive their settlement status as temporary, in hopes of either returning to their home country when conflict is resolved or moving onto another more permanent place of settlement. This perceived sense of instability may interfere with the adjustment process, thereby hindering post-migration resiliency and coping.

Other approaches to understanding post-migration issues draw from analyzing posttraumatic growth (PTG) among refugees. PTG is defined as the positive adjustment following a traumatic event or challenging life circumstance (Sleijpen, Haagen, Mooren, & Kleber, 2016). The concept considers why some refugees actually manifest positive adjustment and psychological coping in the post-migration stage. PTG challenges the assumption that all forced migration threatens well-being, thus bringing to question which variables empower some refugees to be resilient. When discussing the importance of post-migration regulation, it is therefore critical to assess the extent in which refugees move from despair to hope, thereby reflecting a positive adjustment. Refugees who report higher satisfaction with life, general optimism, and greater social support manifest more positive post-migration growth and adjustment (Sliejpen et al., 2016). These findings support other research that has emphasized the role of social support mechanisms in fostering post-migration resiliency (Pieloch et al., 2016).

**Treatment Strategies**

Understanding migration issues related to refugee trauma should help shape the treatment strategies that are offered (Lamkaddem, 2014). On one hand, treatment plans need to consider the extent of pre-migration trauma. On the other hand, variables that impact adjustment and integration should also be thoroughly explored to address the complex issues related to refugee trauma. Although PTSD is the most common symptom associated with refugee trauma (Gormez
et al., 2017; Ugurlu, Akca, & Acarturk, 2016), there are unique challenges specific to refugees manifesting PTSD. Silove et al. (2017), for example, sought to differentiate PTSD and Complex-PTSD as they relate to refugee trauma. The authors’ study found that although PTSD and C-PTSD may be understood as distinct constructs, they cannot be easily separated when applying them to refugee groups due to the broader individual, community, and ecological complexities associated with displacement. These findings are consistent with other studies that emphasize the critical interaction of school and community when offering intervention to refugee children and adolescents (Tyrer & Fazel, 2014).

Since refugees are at significant risk for mental health issues caused by pre-migration trauma and post-migration adjustment difficulties, many researchers have considered the effectiveness of trauma-focused therapies. One meta-analysis, for example, compared 13 randomized controlled trials that investigated the effects of trauma-focused cognitive behavioral therapy (CBT) and narrative exposure therapy (NET) in reducing PTSD and depressive symptoms in refugees (Lambert & Alhassoon, 2014). As hypothesized, the analysis found that trauma-focused therapies are effective in treating refugees by reducing associated trauma-related symptoms. Nevertheless, the study also sought to identify specific moderators that may impact the effectiveness of trauma-focused approaches. For example, the number of trauma-focused sessions that were implemented significantly impacted the effect of treatment; yet, the use of an interpreter or the type of assessment did not seem to impact the effect size in this meta-analysis.

Acknowledging the varying effects of trauma across transitions and phases in refugee migration is also important in implementing effective treatment strategies. Bemak and Chi-Ying Chung (2017) specifically explored the benefits of the Multiphase Model of Psychotherapy (MMP) as an effective and culturally responsive tool that considers transitioning factors. This
model addresses mental health issues rooted in pre-migration stress while also incorporating psychoeducation principles that empower refugees to adjust during post-migration. Furthermore, the effectiveness and appropriateness of both stand-alone and phased approaches should be considered when treating refugees. Issues of complex PTSD may be present in only a minority of refugee cases (ter Heide et al., 2016); in these cases, more specific trauma-focused approaches that focus on PTSD symptoms may be necessary.

Phased treatments, however, that address issues of settlement and cultural adjustment may be more appropriate refugees not manifesting PTSD symptoms. Again, pre-migration, transit, and post-migration factors should be taken into consideration when determining the best treatment strategies for individual refugees. Nevertheless, specific treatment strategies for children and adolescents that address broad symptoms of trauma across both pre- and post-migration stages should be further explored. Importantly, these strategies should be implementable in diverse settings, including schools, community support centers, refugee camps, and arrival centers.

Expressive Therapies

Expressive therapies have been described as an “offspring of music education and therapy, art therapy, dance therapy and drama therapy” (Meyer DeMott, Jakobsen, Wentzel-Larsen, & Heir, 2017, p. 511). Various approaches to expressive therapies include the use of animals (Every, Smith, Smith, Trigg, & Thompson, 2015), sand play (Lacroix et al., 2007), writing (Kalantari, Yule, Dyregrov, Neshatdoost, & Ahamadi, 2012), and bibliotherapy approaches that provide an opportunity for children to express their story through language (Ruf et al., 2010). The motivation behind expressive therapy modalities is to help provide a bridge between the child’s internal and external world. This bridge has typically been disrupted in
traumatic situations. Therefore, techniques that involve expression, body movement, imagination, and fantasy seek to reactivate this bridge. Expressive therapies focus on unlocking the part of the brain that may have seized up due to trauma.

**Problem Statement**

The United Nations estimates that there are 65.6 million people who have been forcibly displaced from their home countries due to war, violence, persecution, and natural disasters (United Nations Refugee Agency, 2018). In response to this global crisis, substantial research has investigated the effects of displacement among refugee populations (Tekin et al., 2016). A trauma-informed understanding of human development clearly predicts that the refugee experience will most likely trigger distress, despair, and hopelessness (Hodes, 2000; Lamkaddem, et al., 2014). The consensus among many researchers and practitioners working with refugees is that they encounter specific mental health issues such as PTSD (Silove et al., 2017), depression (Lambert & Alhasson, 2014), and anxiety disorders (Gormez et al., 2017). It is therefore paramount that effective treatment strategies that address these issues are considered, evaluated, and appropriately implemented.

Due to the traumatic nature of displacement and refugee flight, most therapeutic responses have considered trauma-focused approaches. Trauma-informed therapies such as trauma-focused cognitive behavioral therapy (TF-CBT) and narrative exposure therapy (NET) offer evidence-based approaches that have been empirically tested with both non-refugee and refugee populations (Lambert & Alhasson, 2014). Nevertheless, to implement these therapies, highly trained and/or licensed therapists are required. Considering that 56 percent of the world’s refugees are being hosted in Africa and the Middle East (United Nations Refugee Agency, 2018), there are few qualified clinicians in these host countries to offer these evidence-based treatments.
Furthermore, language barriers make it difficult to effectively implement therapies such as TF-CBT and NET (Röggla, 2012). For this reason, alternatives to TF-CBT and other talk-based trauma therapies should be explored. The problem statement, therefore is twofold: 1) There is a global crisis of refugee children and adolescents who require mental health intervention; 2) Alternative and effective trauma-informed strategies are needed to increase the implementation and dissemination of treatment. Furthermore, this two-fold problem statement is motivated by theoretical implications rooted in neurobiological and human ecosystemic frameworks. For this reason, this study will discuss how these two theories help understand expressive therapies efficacy when treating refugee trauma.

Purpose Statement

The purpose of this study is to investigate the effectiveness of expressive therapies in treating children and adolescents who have been impacted by trauma associated with forced migration. Using a meta-analytic approach, this research seeks to contribute to the knowledge base of effective treatment approaches with refugee children and adolescents who have been exposed to pre-migration and/or post-migration trauma. Findings of this meta-analysis will assist government and non-government organizations in providing more effective services that meet the needs of refugees, while bringing a general awareness to the need to address potential mental health issues. The purpose is to provide a review on the effect of expressive therapies using statistical data; these findings will direct practitioners as they seek evidence-based approaches to treating mental health issues among refugee populations.

Significance of the Study

Field-based humanitarian, non-governmental, and governmental organizations are overwhelmed in meeting the mental health needs of refugees. They do not have the resources,
time, or language abilities to offer therapeutic strategies that require numerous sessions or highly trained clinicians. Refugee children and youth enter the post-migration phase with intense traumatic experiences (Pieloch et al., 2016). In these situations, early intervention is especially important to prevent psychological distress (Meyer DeMott et al., 2017). Furthermore, therapeutic interventions such as TF-CBT and NET are not readily accepted by Eastern cultures due to their Western approach (Ugurlu et al., 2016). Since the majority of refugees originate from Eastern cultures, it is important to consider culturally-relevant practices. Alternative therapies that address refugee trauma in childhood and adolescence should therefore be explored. Ideally, these therapies should be evidence-based, yet also implementable by lay counselors, field workers, and volunteers who can efficiently conduct intervention with limited or no need for translation.

Expressive therapies have received attention over the past few decades as effective treatments for childhood trauma. Several empirical studies, systematic reviews and meta-analyses to date have considered the effectiveness of expressive therapies among child victims of domestic trauma (Bratton, Ray, Rhine, & Jones, 2005; Brown et al., 2017; van Westrenen & Fritz, 2014; Kot, Landreth, & Giordano, 1998). No existing meta-analyses, however, have been found that analyze the effectiveness of expressive therapies specifically among refugee children and/or adolescents who have experienced trauma-related displacement or forced migration. Furthermore, few individual studies have specifically considered the effect of different types of expressive therapies with refugee children and/or youth. There is therefore a small body of research related to this topic to draw from in establishing evidence-based and population-specific conclusions on this therapeutic approach. Of the small body of research, most studies implement small sample sizes and qualitative research designs. Although these studies contribute
substantially to the knowledge base of this topic, individually they offer less evidence-based conclusions. This study, therefore, addresses this research gap by conducting a meta-analysis on existing literature that has investigated the effectiveness of various types of expressive therapies with refugee children and youth. This study’s significance highlights the need to combine statistical findings into computable effect sizes in an effort to further analyze the effectiveness of expressive therapies on refugee children and youth.

**Research Question**

In response to the importance of understanding effective treatment strategies for children and adolescents impacted by refugee trauma related to forced migration, this study conducts a meta-analytical procedure to analyze existing quantitative studies. The following research question is articulated:

**RQ:** Are expressive therapies effective in treating trauma-related symptoms in refugee children and adolescents impacted by forced migration?

**Definitions of Terms**

1. *Expressive Therapies* – The use of art, play, sand play, music, writing (bibliotherapy), dance/movement, or drama (theater) in the context of counseling or rehabilitation (Malchiodi, 2005); a therapeutic modality that implements some type of expression through movement, creativity, imagination, and/or kinetic manipulation of objects to address trauma-related symptomology.

2. *Trauma* – The Substance Abuse and Mental Health Services Administration (SAMHSA) defines trauma as “an event, series of events, or set of circumstances that is experienced by an individual as physically or emotionally harmful or life threatening” (SAMHSA, 2014).
These experiences cause lasting effects that impact the individual’s overall function and well-being.

3. **Refugee** – A person who has been forced to flee their home country because of persecution based on race, religious beliefs, violence, or war (Lambert & Alhassoon, 2015). Typically, refugee status is defined and determined per Article 1 of the 1951 United Nations Convention (UNHCR, 1951). Importantly, not all displaced persons have acquired legal refugee status.

4. **Human Ecosystem Framework** – A theoretical model coined by Bronfenbrenner (1979; 1995) that considers the interacting sociological layers of an individual’s life.

5. **Neurobiological Framework** – A theoretical model that helps conceptualize the neurological impact of trauma on the child and adolescent brain. For the purpose of this meta-analysis study, an understanding of neuroplasticity (Uhernik, 2017), the polyvagal theory (Porges, 2007), and a bottom-up approach (Gaskill & Perry, 2014) of the brain are conceptualized within the neurobiological framework.

6. **Meta-analysis** – A statistical procedure used “to combine results across studies to determine an overall effect” (Davis, Mengersen, Bennett, & Mazerolle, p. 2014, p. 511).

**Summary**

The current global crisis of forced migration is impacting millions of people. This crisis is forcing governmental and non-governmental organizations to respond urgently with appropriate and evidence-based practices to best treat trauma-related symptoms and consequences. If ignored, children and adolescence are at greater risk to develop complex and chronic stress conditions resulting from untreated trauma. Meta-analytical findings that investigate the effectiveness of treatment modalities will help direct organizations and humanitarian agencies in offering the best interventions suitable for diverse settings and
migration stages. For this reason, this study offers statistical analyses of modalities that can be implemented by both lay and licensed counselors, therapists, and humanitarian workers. This study seeks to contribute to the knowledge base of effective treatments to help children and adolescents recover from refugee trauma.
CHAPTER TWO: LITERATURE REVIEW

Overview

In further creating a context for the significance of this study, a theoretical framework and literature review situates the research question. As this meta-analytical study seeks to investigate the effectiveness of expressive therapies in treating refugee children and adolescents, it is important to understand the theoretical implications related to trauma. In response to this need, two theoretical frameworks are presented: neurobiological and human ecosystem. Both these frameworks help explain the effects of trauma on the child while also substantiating the potential benefits of expressive therapies for those who have been impacted by it. After a theoretical framework is created, a review of literature on expressive therapies is presented. This literature review focuses on past research that has investigated specific types of expressive therapies to be included in this meta-analysis study (art, play, sandtray, music, and drama/movement). Then, research that has considered the integration of two or more of these theories is presented. In creating this theoretical framework and literature review, research was conducted using PsycLIT, PsycINFO, MEDLINE, ERIC, Dissertation Abstracts, and Google Scholar databases. Additionally, reference lists found in selected articles were thoroughly scanned for studies relevant to this study.

Theoretical Framework

Various theoretical approaches seek to explain behavioral outcomes in adults who have been exposed to diverse types of trauma (Brewin & Holmes, 2003). Yet, theoretical frameworks that explain the specific and unique effects of trauma on children and adolescents should be considered. Such frameworks help shape an explanation of manifested symptoms while directing theoretically-grounded therapeutic modalities. A developmental perspective, for
example, is commonly applied to the unique impact of trauma on children (Dougherty & Ray, 2007; ). Developmental frameworks consider lifespan differences that affect responses to traumatic experiences depending on the stage of development. School-age children, for example, may manifest symptoms related to somatic, cognitive, and behavioral responses, whereas adolescents are at greater risk for mental health effects (Crane & Clements, 2005; Stanley, Bulecza, & Gopalani, 2012). Differences in cognitive, social, and emotional developmental milestones seek to explain why children respond differently to trauma compared to adults (Salmon & Bryant, 2002).

Expressive therapies draw from several theoretical frameworks in conceptualizing the motivation and method behind the various approaches. In their review of twelve years of literature, van Westrhenen and Fritz (2014) found nine theoretical frameworks that commonly motivate creative arts modalities in treating child trauma. These theories are: psychoanalytical, neuropsychological, attachment, sociocultural, trauma biological, cognitive, developmental, complex trauma, and multivariate. Among these theories, psychoanalytical and neuropsychological emerge as the most popular frameworks in research on creative arts therapies. Yet, research is also frequently grounded in attachment theory and sociocultural theory. The review by van Westrhenen and Fritz (2014) emphasize the diversified theoretical grounding that drive expressive therapy modalities.

For the purpose of developing a theoretical framework for this study, two models are presented as a means to explain why children are uniquely affected by forced migration trauma compared to adults, and to demonstrate how expressive therapies can effectively address these effects. First, a neurobiological framework is presented. This framework draws from a neuropsychological model that considers the developmental function of the child’s brain, which
is physiologically and neurological impacted by trauma. Understanding this impact then appropriately directs a therapeutic response that seeks to address brain neurology. Second, a human ecosystem framework is presented. This theory draws from a sociocultural model that considers the relational impact of trauma; several layers of the child’s social relationships are potentially disrupted or damaged during the process of forced migration. Similarly, an understanding of these disrupted psychosocial relationships direct therapeutic responses. Despite diversified theoretical approaches that motivate expressive therapies, these two frameworks are chosen as they each draw from the most popular biological and social models that emerge from past literature (van Westrhenen & Fritz, 2014).

An understanding and application of both neurobiological and human ecosystem frameworks integrate two theoretical foundations that are paramount in effectively understanding trauma: biology and sociology. On one hand, the neurobiological framework is grounded in theory that emphasizes an understanding of the neurological impact of trauma. On the other hand, trauma occurs within a social context; therefore, it is also important to consider the sociological impact that forced migration imposes on children and adolescents. Understanding the interacting dyad of biological and sociological implications help shape the model of therapeutic modalities. Expressive therapies, therefore, arguably present an effective approach that responds to both these neurological and sociological theoretical frameworks.

**Neurobiological Framework**

When considering the role of neuroscience in trauma therapy, emerging research and discoveries relevant to the brain is important (Uhernik, 2017). In order to understand how to treat trauma, a therapist must consider what happens to the brain when it experiences trauma. Theoretical underpinnings that direct trauma-informed approaches to children and adolescents
should consider the neuroscience of the brain as a means to address both emotional and physiological effects of trauma (Ehlers & Clark, 2000). The motivation behind expressive therapy modalities is to help provide a bridge between the child’s internal and external world (Lin & Bratton, 2015). This bridge has typically been disrupted in traumatic situations. Therefore, techniques that involve expression, body movement, imagination, and fantasy seek to reactivate this bridge. Expressive therapies focus on unlocking the part of the brain that may have seized up due to trauma (Kalmanowitz, 2016). In this section, three concepts related to a neurobiological framework are outlined: neuroplasticity, the polyvagal theory, and the “bottom-up” approach. Each of these concepts consider the impact of trauma on the brain. These concepts will be discussed in an effort to solidify a neurological framework and to justify the use of expressive therapies when treating trauma-related issues and the brain.

Neuroplasticity. New advances of brain imagery have emphasized the brain’s ability to heal and restore after trauma. An understanding of neuroplasticity is critical in guiding clinicians to offering effective treatment strategies (Uhernik, 2017). Neuroplasticity is often understood within the context of neurogenesis, where the brain forms, modifies, and eliminates nerve cells in responses to various external and internal stimuli (Pascual-Leone, Amedi, Fregni, & Merabet, 2005). Trauma has been found to be a type of external stimuli that changes neurological pathways, affecting memory and other brain functions (Deppermann, Storchak, Fallgatter, & Ehlis, 2014). A neurobiological framework uses a physiological understanding to describe how specific hormones within the body’s limbic system shape these neurological pathways (Groeneweg, Karst, de Kloet, & Joëls, 2011).

This study draws from past research that has shown specific areas of the brain, linked to memory, regulation of emotions, language, and general cognition, are affected by traumatic
expressive experiences (Kim & Diamond, 2002). This impact is explained by the concept of neuroplasticity, where the brain is shaped by external and internal stimuli. The concept of neuroplasticity is particularly relevant within the context of trauma since the most “plastic” regions of the brain are the hippocampus and amygdala (Sherin & Nemeroff, 2011) which are responsible for memory and emotions. This explains the symptomology in trauma-related responses where victims typically manifest difficulties in managing emotions and memories. It also explains why post-traumatic stress disorder is frequently linked with memory and flashback symptomology (Deppermann et al., 2014).

Furthermore, neuroplasticity explains the brain’s ability to adapt in post-trauma healing, thereby restoring damaged and disrupted neurological pathways caused by trauma. Neuroplasticity speaks of the brain’s adaptability to heal and create new neurological pathways after traumatic injury, whether emotional or physical (Uhernik, 2017). This neurological framework shapes implications that motivate specific therapeutic modalities. An understanding of neuroplasticity shape therapy models that seek to restore neurological pathways, particularly in the most plastic regions of the brain, including the hippocampus and amygdala. This understanding is also supported with research that suggests expression, movement, and exercise foster neurogenesis (Pascual-Leone et al., 2005; Kays, Hurley, & Taber, 2012). Therapeutic modalities, therefore, that intentionally integrate forms of expression and movement are hypothesized to enhance neurogenesis in response to a neurobiological framework.

Other research has found that attachment systems in children help build neurological connections that stabilize overall brain functioning (Stien & Kendall, 2004). Therefore, the role of social interactions as a means to foster neurogenesis and respond to neuroplasticity should be integrated into therapeutic approaches (Gaskill & Perry, 2014). For this reason, the social aspect
of expressive modalities such as play (Farahzadi, Bahramabadi, & Mohammadiifar, 2011) and dance (Dieterich-Hartwell, 2017) may respond to the need to activate relationships and rebuild attachment models in children and adolescents impacted by trauma (Stauffer, 2008). Expressive therapies help children recover from trauma-related attachment difficulties by improving a sense of self and quality of the parent-child relationship (Southwell, 2014).

**The Polyvagal Theory.** The polyvagal theory is rooted in a biological understanding of how the human brain responds to trauma (Dieterich-Hartwell, 2017). Porges (2007) notes that the polyvagal theory “emphasizes the neurophysiological and neuroanatomical distinction between two branches and proposes that each branch supports different behavioral strategies” (p. 120). This theory seeks to understand the effects of trauma as being biological rather than psychological. In other words, the effects of trauma are understood in the context of neurological and physical responses to the body’s encounter with danger and harm. In the body’s safe, autonomic state, normal neurological and involuntary functioning is occurring in homeostasis. Yet, as a traumatic event disrupts this homeostasis and responds to the threat, the vagal nerve becomes a key player in the neurological response. The purpose of this section is not to discuss the complexity and intricacy of the polyvagal theory, rather to propose it as a substantive component of the neurobiological theoretical framework in hypothesizing what happens to children and adolescents impacted by trauma, and why expressive therapies may potentially help them recover from this impact.

The theory also emphasizes the synergetic role of the vagal nerve that interconnects many organs in the body. Therefore, the polyvagal theory is rooted in the interactive and holistic impact of trauma on the body’s physical, emotional, and overall well-being. According to this theory, when the autonomic system activates a danger state, the vagal nerve’s connectedness
with the rest of the body also impacts senses. This connectedness is noteworthy in light of the previous discussion on neuroplasticity; the brain’s most plastic region interacts with other areas of emotional, cognitive, and linguistic functioning. For this reason, trauma-impacted victims may describe senses (smell, taste, hearing) differently in the post-trauma stage. Some research suggests that the inner ear muscles are also impacted, affecting the ability to detect the frequency of human voice in the post-trauma stage. This finding is significant when considering the relational impact of trauma that affects attachment models. A young child impacted by trauma, for example, may experience exacerbated effects on the parent-child relationship due to the inability to readily detect the parent’s voice and assimilate emotional cues. Earlier attachment systems may be disrupted due to discontinuous sensory and auditory connections throughout the pre- and post-migration stages.

The vagal nerve is also associated with the ability to socialize and feel safe in social situations. This is worthy of consideration when assessing trauma, since the vagal nerve controls the autonomic nervous system response. In extreme trauma or a state of distress, a parasympathetic response may cause the body to shut down. In this case, the polyvagal response interferes in the body’s sympathetic functioning, “resulting in a freeze response or even sequential breakdown of neurological functioning” (Uhernik, 2017, p. 66). Porges (2007) posits that attachment disorder and post-traumatic stress disorder may be symptoms of this neurological response to trauma where the polyvagal impulse causes the child to enter into a socially protective stage.

Expressive therapies are hypothesized to effectively respond to a polyvagal perspective of trauma. For example, in observing the benefits of dance/movement therapy among victims recovering from the 2010 earthquake in Haiti, Gray (2017) notes that the social engagement
component of dance and movement directly addresses the traumatic symptoms explained by the polyvagal theory. Dance/movement therapy develops trust and safety that may have been compromised in the body’s physiological reaction to stressors. In restoring this climate of trust and safety, “music, movement, dance, and rhythm, are activities that provide an immediate resource to shift psychological states” (Gray, 2017, p. 44). A polyvagal-informed response to trauma helps reset the autonomic nervous system by restoring safety (Porges, 2007). In providing a safe environment, expressive therapies may also help activate oxytocin which has been associated with building attachment system models (Gray, 2017).

**Bottom-up Approach.** Another important concept within the neurobiological framework of trauma is the bottom-up approach to understanding the brain. Gaskill and Perry (2014) describes this approach as somatosensory, where the lower brain modulates “patterned, repetitive, and rhythmic input” (p. 184). Traumatic experiences that trigger fear and panic release neurochemicals and hormones in the lower brain to help somatically energize the body to escape from danger (Uhernik, 2017). In this bottom-up framework, the lower brain begins to dominate the cognitive functioning, thereby hijacking the higher brain’s analytical processing. This theory has tremendous implications for trauma victims, as chronic and prolonged encounters with fear and danger may cause a long-term imprint on the brain’s physiology, affecting memory, emotional regulation, and learning (Grabbe & Miller-Karas, 2017). Children and adolescents impacted by refugee trauma, exposure to war, violence, and migration trauma may experience heightened emotional dysregulation in the post-migration stage.

The bottom-up framework has been used to explain somatology associated with post-traumatic stress disorder, where symptoms are frequently manifested by implicit memories linked to images, sounds, and smells (van der Kolk, 2014). The “emotional scars” of trauma are
the result of the brain’s primitive response to protect the individual from further harm. (Groger et al., 2016). For this reason, refugee children and adolescents traumatized by forced migration may have shifted from higher cortical processing to a cognitive functioning that is dominated by a limbic response (Gaskill & Perry, 2014). The shift results in further and subsequent strengthening of neuropathways in the lower brain which increase the likelihood of limbic responses to stimuli rather than cortical processing. Hence, an ongoing manifestation of somatosensory impulses will emerge as the victim copes with the trauma.

Furthermore, the bottom-up approach considers the effect of trauma on other parts of the brain, including the orbitofrontal cortex, the amygdala, and the Broca area (Weinberg, 2006; Lacroix et al., 2007). Respectively, these areas are involved in memory storage, emotional responses, and language and verbal expression, thereby imposing significant implications to trauma symptomology. For this reason, traumatized children are frequently reported as having difficulty regulating emotions and using language to verbalize past experiences (Sweeney, Bagerly, & Ray, 2014). The bottom-up approach, therefore, seeks to understand the effects of trauma from a physiological perspective that manifests itself in behavioral and emotional symptoms. Hence, effective treatment strategies should not only seek to address the behavioral and emotional issues, but should be cognizant of neurobiological issues that may be at the root of the symptoms.

Neurobiology and Expressive Therapies. An understanding of neuroplasticity, polyvagal concepts, and the bottom-up approach help conceptualize what has happened to the traumatized victim physiologically and neurologically. Children and adolescents impacted by refugee trauma may be experiencing neurological disruptions linked to stored memories, dominant images, and body sensations (Appleton, 2011). Expressive therapies are hypothesized
to address these disruptions by activating neurological responses, thereby helping the victim engage on a cognitive, emotional, and psychological level internally and socially (Lusebrink, 2004; Kalmonowitz, 2016). As the victim is experiencing the neurological effects of trauma, resulting in an agitated limbic system and dormant prefrontal cortex, expressive therapies may offer a nonverbal intervention to help foster speech, emotional regulation, and higher brain thinking (Sweeney et al., 2014).

Gaskill and Perry (2014) argue that when considering trauma’s neurobiological effect on the brain, expressive therapies, such as play therapy, may be more effective than traditional trauma-focused approaches to psychotherapy, such as cognitive-behavioral or cognitive-relational. The authors note that therapies that focus on language may fail when the lower brain is overly disorganized and dysregulated. For this reason, the bottom-up approach specifically emphasizes a healing process where the initial step in therapy is to address the hypo-arousal state of the sympathetic nervous system (Uhernik, 2017). Then, therapy can begin to focus on the cognitive processes in the cortical areas of the brain. A neurobiological approach also considers side-to-side healing that focuses on the connectedness of the different hemispheric functions of the brain. Expressive therapies provide strategies that seek to foster the connectivity between right and left brain using symbolic and nonverbal expression, thereby increasing self-regulation and neurological pathways. Expressive therapies, such as art therapy, may effectively address both the bottom-up healing process and side-to-side connectivity necessary in treating trauma (Lusebrink, 2004).

Furthermore, nonverbal approaches to treatment may be more effective than verbal interventions. Lacroix et al. (2007) cites past research that suggests “nonverbal expression of emotions and actions has a more immediate effect than the use of words” (p. 101). These
findings support the primary thrust of expressive therapies that seek to use nonverbal and tactile means to restore balanced and regulated cognitive functioning. Expressive therapies provide nonverbal symbols, enabling the child to engage in tactile and sensory experiences as they begin to shift back to higher cortical thinking and away from a dominating limbic system response to stimuli. Such engagement may also effectively break through neurological defense mechanisms that may block other attempts of therapeutic interventions that depend on language to penetrate the victim’s closed emotional circuitry (Sweeney et al., 2014).

Finally, a neurobiological understanding of trauma also emphasizes the victims’ possible inability to feel pleasure due to the physiological damage that occurred (Gaskill & Perry, 2014). The sensation of pleasure is typically based on the release of dopamine in the ventral tegmental and nucleus accumbens areas of the brain; yet, the activator of this release may be sourced in either a higher brain or lower brain response. Gaskill and Perry (2014) emphasize that neurological responses in traumatized children may limit the activation of dopamine release as the limbic system dominates cognitive function. This limitation equates to reduced frequencies of dopamine release and the feeling of pleasure. The authors also connect this concept with the inability to exercise delayed gratification due to the child’s constant alarmed and aroused state. Expressive therapies may help to activate the dopamine release in both higher and lower brain mediation, thereby helping the child move back to a place regulation via somatosensory routes.

**Human Ecosystem Theory**

Urie Bronfenbrenner’s (1995) human ecological systems theory is an example of a theoretical endeavor to identify various social systems that impact an individual’s psychosocial development. The theory assumes that several interacting layers of systems directly and indirectly affect human development. Bronfrenbenner (1979; 1995) identified these layers as
microsystem, mesoystem, exosystem, macrosystem, and chronosystem. Past research has articulated ecologically grounded trauma counseling that focuses on multiple layers of counseling. Bronfenbrenner’s model “offers a comprehensive framework for understanding the ways in which numerous systemic factors influence our clients” (Goodman, 2015, p. 288). An ecological perspective has been specifically applied to play therapy as a means to integrate a developmental and systematic approach that is “aware of the many systems affecting the client” (Homeyer & DeFrance, 2005, p. 143). Developed by O’Connor (1991), a ecosystemic play therapy approach uses play as a tool to help connect the various sociological layers impacted in the child’s social ecosystem.

Furthermore, an ecosystem framework helps address the cultural issues that significantly impact trauma recovery (Marsella, 2010). Issues related to cultural differences and treatment modalities are especially relevant to children and adolescents impacted by forced migration. Therapeutic approaches should consider cultural-specific issues that are interwoven with trauma symptomology. In this section, each of these layers will be briefly defined for the purpose of better understanding the application of this theory. Then, the specific application of this theoretical framework will be discussed to establish its relevance in using expressive therapies as a viable therapeutic modality with children and adolescents impacted by forced migration.

**Microsystem.** This layer represents the “innermost level of the environment” (Tissington, 2008, p. 107) closest to the individual. Examples of this system include the individual’s immediate family, work, school, and closest friends. The individual maintains regular and constant interaction with his/her microsystem. The key descriptor in identifying the microsystem layer is reciprocity. In other words, an individual’s relationship with microsystemic influences must be both bidirectional and reciprocal in the interaction. This layer is easily
identified as having observable and detectable direct influences on shaping the individual's thoughts, perceptions and beliefs.

Understanding the child’s microsystem highlights relational issues affecting trauma and interpersonal relations. Traumatic experiences that occur more proximally at the microsystem level may pose more intensive effects of stress (Bronfenbrenner & Ceci, 1994). At the same time, treatment strategies that specifically integrate and address microsystemic factors may be more effective at fostering resiliency. Disrupted microsystem relationships, manifested in parent and peer attachment issues and difficulties, may emerge as the most detrimental social adverse effects among children and adolescents impacted by forced migration (Pieloch et al., 2016; Schottelkorb, Doumas, & Garcia, 2012). Therefore, the most effective therapeutic responses may be those that seek to restore these microsystem relationships (Lim, & Ogawa, 2014; Ray, 2008). Expressive therapies may effectively rebuild attachment systems thereby addressing issues at the microsystem level (Anderson & Gedo, 2013).

**Mesosystem.** This system can be viewed as the connecting mechanisms of microsystems. They are influences in an individual’s life that bring the members of two or more microsystems together. Mesosystems can be either formal or informal. A mesosystem joins microsystems in an individual’s innermost environments. The connectivity between two microsystems in a child’s life may determine the efficacy of the two separate microsystems (Bronfenbrenner & Ceci, 1994). Understanding the child’s mesosystem, therefore, emphasizes that microsystems are not mutually exclusive when assessing their effect on the child’s life.

For a refugee child, clearly mesosystems have been removed due to forced migration. In response to this disruption, therapeutic models should seek to assess which microsystems exist, and then provide a bridge or link between these systems. Rousseau et al. (2005) emphasize the
effectiveness of creative expression in creating a bridge between family and school when helping refugee and immigrant children in the classroom context. If refugee children maintain both family and school as microsystems in the post-migration stage, expressive therapies may seek to bridge these systems by becoming a mesosystem.

**Exosystem.** Tissington (2008) describes the exosystem layer as “social settings that do not contain candidates, but that affect their experiences in immediate settings either formal or informal in a mentor’s social network” (p. 107). These influences reflect how active players in the individual’s microsystem may be affected by their own microsystems, hence bringing these influences into the individual’s environment. The exosystem is therefore viewed as posing an environmental effect on an individual, yet through more indirect paths of contact. Clearly, when assessing the ecosystem impact on refugee children and adolescents, the exosystem plays a detrimental role as political conflict and unrest is frequently the cause of forced migration. This exostystem effect may be further exacerbated in the post-migration stage, as the family seeks to access new and unfamiliar resources in either the place of transit or settlement (Lewig et al., 2010). In other words, unstable and changing exosystems will potentially increase stress.

Although systematic approaches to therapy typically focus on the microsystem and mesosystem environments, a thorough ecosystem approach also considers the broader forces that help the child develop resiliency and coping strategies (Boon, Cottrell, King, Stevenson, & Miller, 2012). Expressive therapies, such as sandtray therapy, may help the child nonverbally identify and express these larger exosystemic factors by recreating their world. Furthermore, expressive therapies may provide a means for the child or adolescent to develop a sense of a reestablished connectedness of exosystems in the post-migration stage of healing.
**Macrosystem.** According to Bronfenbrenner’s (1979; 1995) model, the macrosystem is the outermost level of an individual’s ecosystem in terms of contact. Influences in the macrosystem are not identifiable contexts, rather they represent culture, societal norms, beliefs, customs, and laws. The macrosystem represents an environmental effect that may be far removed from an individual in terms of its origin, yet clearly impacts the other layers of environment in a dynamic and interactive way. Although contact may be distant in terms of time and space, an individual’s psychosocial development is significantly impacted by the macrosystem.

In considering the macrosystem effect on refugee children and adolescents, cultural and social factors impact the adjustment in the post-migration stage, thereby increasing stress and trauma symptomology (Silove et al., 2017). Cultural differences related to the child’s place of origin and location of transit or settlement should be considered. Expressive therapies may be an effective modality to maintain the positive cultural aspects of the child’s place of origin. Maintaining a cultural connectedness may be an important element in fostering resiliency among refugee victims (Kalmanowitz, 2016). Incongruent cultural features between pre- and post-migration environments may further exacerbate stressors (Silove et al., 2017). Therefore, expressive therapies such as art and dance, may provide a child the opportunity to preserve macrosystemic characteristics, thereby creating an environment of adjustment and security (Harris, 2007).

**Chronosystem.** Bronfenbrenner (1995) also recognized that the element of time significantly impacts the ecology of an individual’s development. Chronology may be exposed within the macrosystem, such as culture or laws changing (or being resistant to change), over a period of time. Effects may also entirely dwell within the microsystem. For example, divorce
poses escalating and varying effects on an individual over a period of time. Overall, the chronosystem is viewed as an underlying conveyor among all the ecosystems, further portraying the dynamic nature of the human ecological systems model.

As previously discussed, the various stages of migration speak of the chronosystem effects related to refugee trauma. The specific type of therapy, whether expressive or another trauma-informed approach, may be directed by the effect of the chronosystem in the child’s life. Boon et al. (2012) note that the chronosystem may also be used to direct the model’s sustainability and to quantify changes in the interaction of the other social systems. For example, implementing filial play therapy within the parent-child dyad seeks to address microsystem factors (Smith, 2000); yet, the chronosystem considers how this dyadic relationship changes over time.

Application of Human Ecosystem Framework. In understanding and applying the human ecosystem framework within the context of expressive therapies and refugee trauma, it is important to understand the concept of resiliency. As the extent of resiliency is frequently viewed as a predictor to coping from trauma (Egeland, Carlson, & Sroufe, 1993), the source of resiliency has also been explored. Research considers resiliency-formation within both individual and community contexts (Breton, 2001). That is, on one hand resiliency forms out of an individual’s personality traits (Norris, Sherrieb, Galea, & Pfefferbaum, 2008); yet, it is also perceived to develop within a community structure (Geis, 2000). The human ecosystem framework, therefore, helps conceptualize the varying social systems that potentially influence the individual child’s level of resiliency. This level of resiliency then impacts the extent in which the child is impacted by the traumatic experience and the degree in which the child responds to specific types of therapeutic modalities.
Boon et al. (2012) propose Bronfenbrenner’s human ecosystem framework as an appropriate and effective model to predict resiliency among communities impacted by natural disasters. The authors point to Bronfenbrenner’s model as identifying and labeling “linkages between the individual and family to the larger social environment” (p. 396). The quality of linkages predict resiliency when traumatic experiences threaten the interchange of social support and community relations. The human ecosystem model does not merely predict the degree of resiliency; it provides a framework for therapeutic modalities by emphasizing the need to fortify linkages when they have been disrupted by traumatic events. Veronese and Barola (2018) also refer to Bronfenbrenner’s theoretical model when describing the socially intersecting factors that foster resiliency among school-age children impacted by war and political violence in the Gaza strip.

In the case of refugee trauma, clearly multiple layers of the child’s ecosystem have been disrupted. Bronfenbrenner’s model, therefore, concentrates on the breaks in the child’s social links. Yet, it also directs the practitioner to intervene by restoring these social ruptures. In responding to the need for resiliency in the trauma recovery process, both individual and community resiliency should be considered. Whereas many traditional therapeutic modalities focus on individual resiliency, several expressive arts modalities incorporate community integration. Intervention to trauma should seek a balance where on one hand the individual traumatic experiences of the child are recognized; yet, on the other hand they are understood within their social contexts (Veronese & Barola, 2018). Furthermore, effective treatment models must draw upon these social contexts. Music therapy, for example, may be an effective tool to promote social inclusion among refugee children and adolescents (Saether, 2008), thereby fostering resiliency and addressing trauma symptomology.
This study considers how expressive therapies address both types of resiliency according to the human ecosystem framework. As expressive therapies give a voice to the traumatized child, social bridges are reshaped through sensory experience, visual expression, and social engagement. That is, expressive therapies seek to nurture the child’s social ecosystems by placing the child in a social context and building resiliency in response to trauma. In the next section, past research specific to each of the types of selected expressive therapies included in this meta-analysis is discussed. The purpose is to build on the presented theoretical framework and consider related literature that has investigated expressive therapies.

Related Literature

Past quantitative and qualitative studies have explored the effectiveness of expressive therapies in treating children and adolescents impacted by trauma. Many of these studies represent diverse social contexts and types of trauma. For example, van Westrhenen and Fritz’s (2014) review ed 38 articles that investigated creative arts therapy as a treatment for child trauma. In their review, traumatic experiences related to injury, medical problems, natural disasters, relational problems, and war were explored. The articles considered varied therapeutic interventions, including short-term and long-term care, and therapeutic environments. Overall findings by van Westrhenen and Fritz (2014) suggest that although extensive quantitative and qualitative research has been conducted on the effects of expressive arts on treating trauma, “existing studies over the last 12 years have shown methodological weaknesses” (p. 533).

These findings are consistent with other reviews and critiques that conclude that although expressive therapies appear to be an effective way to reduce traumatic symptoms associated with trauma, further research and methodological design is needed (Eaton, Kimberly, & Widrick, 2010; Orr, 2007). Nevertheless, past studies have empirically investigated the effects of
expressive therapies, thereby contributing to the knowledge base of therapeutic interventions with children and adolescents impacted by trauma. This literature review seeks to outline past research specific to the individual types of expressive therapy included in this meta-analysis. This section, therefore, presents past literature related to each of the type of therapy in the context of child trauma. Specific research related to displacement trauma is included and emphasized due to its relevance to this study. Finally, research that considered the integration of two or more of the types of expressive therapies is presented, as these integrative approaches are also included in this meta-analysis.

**Art Therapy**

There is substantial research that has investigated the effects of art therapy on trauma. Malchiodi (2005) describes art expression as “a visual language through which people can express thoughts and feelings that they cannot put into words” (p. 17). For this reason, art therapy has been found to be a valuable tool to help victims of trauma express complex experiences that words cannot effectively expressed. Kalmanowitz (2016) also notes that art therapy provides access to nonverbal material when working with victims of trauma. The inability to effectively use words may be due to the associated complexity of trauma or due to the developmental capacity of child (van Westerhenen & Fritz, 2014). Art therapy seeks to provide a means for trauma victims to communicate in another form of language, thereby helping them recover from emotional distress and anxiety (Malchiodi, 2005).

In addition to facilitating another language for communication, art therapy has been found to alleviate stress through kinetic benefits (Kalmanowitz, 2015). Manipulating physical objects such as clay, paints, and brushes may increase mindfulness (Appleton, 2011), thereby addressing the neurological implications of traumatic experiences. Art therapy has also been
investigated as an effective therapeutic strategy to integrate with talk therapy. McNamee (2004), for example, discusses how art therapy benefits talk therapy by activating the creative side of the brain. This activation helps the victim express and expose issues in therapy that perhaps would normally not be accessed in a talk-only type session. For this reason, art therapy is frequently incorporated into other types of therapeutic modalities as a means to facilitate and direct the process (Moosa, Koorankot, & Nigesh, 2017).

Although substantive research has considered the overall benefits of art therapy when treating traumatic experiences, little research has specifically considered its effect on refugee children and youth. Rowe et al. (2017) note, however, that art therapy has been shown to be effective with vulnerable populations where language barriers may interfere the process of talk therapy. Furthermore, Quinlan, Schweitzer, Khawaja, and Griffin (2016) cite past research that has found art therapy may help reconstruct children’s meaning and identity by enabling them to retell the story, address grief and loss, and rebuild social connections. According to the authors, art therapy may, therefore, be especially relevant to refugee children and adolescents who struggle with grief and loss, representing an increased need to rebuild and strengthen social connections.

Ugurlu et al. (2016) found art therapy to be an effective therapeutic approach to help Syrian children recover from psychological symptoms caused by forced migration to Turkey. Art therapy helps in alleviating post-traumatic stress and depression symptoms. In their study, art therapy was implemented in a 5-day workshop consisting of three sessions each day. In the author’s study, art therapy sessions involved expressing thoughts and feelings through visual arts, reducing stress, encouraging creativity, emotional integration, catharsis, sublimation, improving self-confidence and having respect for self and others, gaining insight, enhancing
problem-solving skills and having fun. Despite past efforts to evaluate the effectiveness of art therapy programs, the authors note that many studies have focused on qualitative assessments rather than implementing quantitative tools.

**Play Therapy**

Play therapy has its origins in Anna Freud’s (1965) psychoanalytical approach. It is a technique that is frequently integrated into other types of therapies that draw from psychodynamic, humanistic, and cognitive-behavioral practices (Homeyer & DeFrance, 2005). Yet, specific modalities of play therapy vary among practitioners. For example, an Adlerian approach to play therapy follows a more directive strategy whereas a child-centered approach focuses on providing an environment where the child feels secure and accepted (Kottman, 1997; Meany-Walen, Bratton, & Kottman, 2014). The view of play therapy’s role in treatment may also range from treating the trauma to providing an assessment tool that directs other therapeutic approaches. Steele and Malchiodi (2012) describe play therapy as a “sensory-based approach” intervention (p. 15) that may be effective in providing an environment where the child can engage in appropriate touch and stimulation. Miller (2016) also notes that bodily sensations can be used in a clinical setting to address the memory phenomena component of neuroeducation.

Meta-analyses have consistently found play therapy to be an effective form of therapy to treat children impacted by trauma (Bratton et al., 2005). Jensen, Biesen, and Graham (2017) conducted a meta-analysis review in their investigation of 100 studies that measured play therapy outcomes. Various symptomologies and presenting problems were identified as measurable outcomes, including emotional and social problems, family problems, and trauma-related problems. The authors’ meta-analysis found that a significant moderate effect across all types of outcomes. The effectiveness of play therapy may further increase when measuring the extent of
parental involvement and number of sessions implemented in the therapeutic process (LeBlanc & Ritchie, 2001). Importantly, the benefits of play therapy also emerge in longitudinal analyses that emphasize favorable outcomes across time (Muro, Ray, Schottelkorb, Smith, & Blanco, 2006).

Play therapy conducted in groups settings may further increase the benefits by enhancing social interaction. In measuring the effects of child-centered group play among homeless children, children yield an increase in self-concept and decrease in depression and anxiety (Baggerly, 2004; Baggerly & Jenkins, 2009). This group setting is supported by the human ecosystem framework that suggest a social environment and relationship development is critical when addressing trauma (Bowers, 2009; Cochran, Cochran, Cholette, & Nordling, 2011; Madsen Clausen, Ruf, Von Wiederhold, & Heineman, 2012). Other research suggests that child-centered or non-directive play therapy, where the child is free to express emotions without therapeutic directions, helps the child to rebuild emotional regulation, thereby addressing internalized problems (Bayat, 2008), social-emotional issues (Cheng & Tsai, 2014; Cheng & Ray, 2016; Mahmoudi-Gharaei, Bina, Yasami, Emami, & Naderi, 2006), academic problems (Blanco & Ray, 2011; Blanco, Muro, Holliman, Stickley, & Carter, 2015), disruptive behaviors (Bratton et al., 2013), social skills (Meany-Walen & Teeling, 2016), anxiety (Stulmaker & Ray, 2015), and somatoform disorders (Dutta & Mehta, 2006).

Emerging research is focusing on play therapy’s effectiveness specifically with refugee children. Killian, Cardona, and Hudspeth (2017) note that play therapy may be especially effective when treating refugee children as it delivers a transcultural approach that “conveys children’s internal and personal world, which includes their thoughts, problems, discernments, and desires” (p. 25). The effect of play therapy is also comparable to other types of therapeutic
interventions, such as trauma-focused cognitive behavioral therapy, when measuring its effect on post-traumatic stress disorder symptoms in refugee children (Schottelkorb et al., 2012). Furthermore, play therapy may be specifically beneficial for refugee children who have experienced disrupted attachment systems by helping to reestablish internal working models (Anderson & Gedo, 2013). Again, these benefits are frequently attributed to the social setting in which play therapy occurs, especially when group play therapy is implemented (Ojiambo & Bratton, 2014; Su & Tsai, 2016).

**Sandplay Therapy**

Based on the same principles as play therapy, sandplay (or sandtray) therapy specifically focuses on the benefits of the sand tray as a means to help children express their thoughts and feelings. It emphasizes the importance of a sensory-based experience that incorporates the tactile sensation of sand; yet, it also utilizes the sand tray as a representation of the child’s world. Homeyer and Sweeney (2005) emphasize that sandtray therapy utilizes sand and water to depict the elements of the earth and a collection of miniatures to depict universal symbols of the child’s world. One of the primary goals, therefore, when implementing sand play therapy, is to help the child express the challenges they face by representing their world in the sand tray (Rousseau, Benoit, Lacroix, & Gauthier, 2009). Another goal is to help the child gain a sense of agency as they manipulate figures and symbols of their world in the sand tray.

Also, similar to play therapy, sandtray therapy draws from and understanding of developmental principles to drive different modalities. Some approaches view sandtray therapy as a diagnostic tool to shape other therapeutic approaches; whereas other approaches view the sandtray process itself as an effective therapeutic technique (Flahive & Ray, 2007). In either case, researchers agree that sandtray therapy may help children express themselves in a
nonverbal way while providing a kinesthetic quality to the therapeutic environment (Homeyer & Sweeney, 2005). Other benefits include a sense of safety and distance (Schaefer, 1994), thereby reducing aggressive behavior in children (Momeni & Kahrizi, 2015). Southwell (2016) describes sandplay as the “externalization of unconscious emotions and thoughts in a safe and contained environment [to] facilitate the individual’s meaning-making processes and the processing and integration of unresolved and/or traumatic experiences” (p. 117), thereby responding to both the neurobiological and human ecosystem frameworks. Furthermore, sandtray therapy helps establish boundaries and limits (Homeyer & Sweeney, 2005) for the child.

Lacroix et al. (2007) considered the benefits of sand play among refugee preschoolers impacted by tsunami trauma. The authors’ qualitative study found that sand play provided children “an opportunity to express and work through a range of emotions stemming from the interaction of a variety of past and present experiences” (p. 110). Kronick, Rousseau, and Cleveland (2017) conducted a similar qualitative study with refugee children in detention. In their study, sandplay was used as a means to understand the detention experience through the perspective of the children. In both studies, implementing sandtray therapy provided a window into the child’s world in the quest to expose coping strategies, feelings of vulnerability, and trauma-related symptoms. Furthermore, the sandtray therapy was conducted at school, thereby providing an effective bridge between the child’s home life as the child expressed trauma-related emotions. This bridge may address the previously discussed mesosystem role of expressive therapies as the child’s worlds are linked.
Dance/Movement Therapy

Qualitative studies have considered the effectiveness of dance/movement therapy as a means to help children cope with trauma (Ben-Asher, Koren, Tropea, & Fraenkel, 2002; Quinlan et al., 2016; van Westrhenen & Fritz, 2014). The benefits are typically considered in longitudinal contexts, yet short-term dance therapy may also foster emotional and physical well-being (Dietrich-Hartwell, 2017). Harris (2007) describes the benefits as “kinetic empathy” in that dance therapy encourages movement with others, thereby fostering an empathetic component when healing from trauma. This is an important consideration in emphasizing that dance therapy not only addresses the physical need to release energy through movement (Blaustein & Kinninburgh, 2010); a relational component is also integrated. This may especially be effective in refugee camps or group settings where refugee children dance with others who have been victimized in similar ways.

Meyer DeMott et al. (2017) analyzed an expressive arts therapeutic approach with unaccompanied adolescents in the post-migration stage. The program incorporated dance movement into the sessions. The authors found that integrating animal movements into expressive arts may help the youth “release tension and energize” (p. 513). Overall, the program was found to help the youth develop self-efficacy, hope, and a sense of safety. Furthermore, the dance aspect of the program was found to foster social engagement while activating the adolescents’ “here and now,” thereby addressing the potential neurobiological component of forced migration. Ugurlu et al. (2016) further emphasize the benefits of dance therapy among Syrian refugee children by helping them to achieve a sense of here and now, increase self-awareness, and learn self-regulation. Other benefits include stimulating socialization, fostering relaxation, and setting boundaries.
Koch and Weidinger-von der Recke (2009) also hypothesize the benefits of dance therapy with traumatized refugees. The authors support their hypothesis by qualitatively analyzing a dance therapy program in Munich, Germany and by reviewing past research that supports the effectiveness of body psychotherapies when treating traumatized refugees (Karcher, 2004). Dance therapy is described as a sensorimotor approach in creating an “entry port to treat the trauma and its aftermath” (Koch & Weidinger der Rocke, 2009, p. 291). It therefore specifically responds to both the neurobiological and human ecosystem frameworks previously presented, in that it addresses physiological trauma to the brain while rebuilding a sociological context (Koch, Kunz, Lykou, & Cruz, 2014).

Music Therapy

Music is sometimes described as a universal language that transcends language barriers and cultural differences. For this reason, the effectiveness of music therapy among the refugee population has been explored (Jones, Baker, & Day, 2004; Baker & Jones, 2005). A systematic review by Henderson, Cain, Istvandity, and Lakhani (2017) found that although there is need for further investigation of the effectiveness of music therapy, substantial research shows improvements in emotional health, reduction in stress, and increase in social wellbeing among migrant populations. The authors further note the benefits of music therapy among this population group due to increase stress associated with not knowing the local language in their post-migration place of settlement.

Some children may naturally use music as a form to express their feelings (Cohen, Mannarino, & Deblinger, 2017). The intentional implementation of music therapy may therefore be especially appropriate for these children. Nonetheless, the integration of music into other types of expressive therapies or trauma-focused therapies may be beneficial in fostering a
soothing and relaxing environment (Storie & Hoskyns, 2016). The use of music has therefore been incorporated into mindfulness approaches to treating children impacted by forced migration trauma. Catani et al. (2009) compared the effects of therapy with children from Sri Lanka who were traumatized by war and natural disasters. The researchers found that both narrative exposure therapies and medication-relaxation therapies were effective in reducing symptoms associated posttraumatic stress disorder. Music was an important aspect of the medication-relaxation technique, and results were particularly significant in reducing avoidance and hyper-arousal symptoms in the immediate aftermath of implementing the approach. These findings are consistent with other studies that find music therapy benefits refugee children in reducing externalizing behaviors such as aggression and hyperactivity (Baker & Jones, 2006).

Music therapy has been considered beneficial in restoring neurological functioning in children who have been impacted by trauma (Juslin & Sloboda, 2010). Osborne (2012) emphasizes that music therapy may be a useful approach to help children who have been adversely impacted by war-related conflict. Past reviews on the effectiveness of music therapy describe the “positive neurological effects in the brain, which bring a sense of calm to negate agitation, reduce pain via distraction, inculcate positive changes in behavior, and assist people to build social capital and establish connectivity with others” (Henderson et al., 2017, p. 460).

**Writing Therapy**

Therapy modalities that implement writing, poetry, and biblio-approaches to addressing traumatic symptomology are less known among expressive therapies. Past research has presented the effectiveness of unstructured writing as a means to express emotional difficulties that are linked with traumatic events (Pennebaker, 1995). Similar to other expressive therapeutic approaches, writing therapy provides an avenue for victims to articulate, discover, and access
emotions formed by traumatic experiences. Proponents to the effectiveness of writing therapy for adults in bereavement (Lichtenthal & Cruess, 2010) draw from the previously discussed neurobiological framework, suggesting that writing enables the brain to process traumatic experiences when speech may become ineffective. For this reason, trauma-informed and evidence-based approaches, such as TF-CBT, frequently integrate writing as an activity to be implemented with other cognitive-behavioral strategies (Kalantari et al., 2012). Yet, TF-CBT’s use of writing tends to be structured and intentional compared to broader writing therapy approaches that are more client-centered and provide more freedom. Narrative Exposure Therapy (NET) is another example of a trauma-focused approach that integrates written narration as a means to help clients express traumatic symptomology. NET, however, is not categorized as a type of writing therapy due to its structured approach and level of therapist interaction. Nevertheless, structured writing approaches have been found to be more beneficial also for children when treating different types of trauma (Van der Oord, Lucassen, Van Emmerik, & Emmelkamp, 2010).

KidNet is a variation of NET that was designed specifically for treating children with posttraumatic stress symptoms (Neuner et al., 2008). Ruf et al. (2010) found KidNet to be an effective therapeutic approach in treating children and adolescents impacted by refugee trauma. However, since KidNet implements alternative ways for children to narrate their traumatic experiences, with use of symbols and objects as opposed to writing, it cannot be classified as an expressive writing therapy. Similar to its adult version, NET, KidNet integrates writing activities into a more structured trauma-focused model. For this reason, KidNet was not included in the inclusion criteria for studies in this meta-analysis.
Writing for Recovery (WfR), created by the Children and War Foundation, was designed for children and adolescents impacted by trauma. It is a type of writing therapy that incorporates both unstructured and structured writing tasks that give the children an opportunity to express their memories and insights (Lange-Nielsen, 2012). WfR’s primary objective is to use writing as a tool to help the victims articulate the sensory component associated with traumatology. Calligraphy training has also emerged in research as a type of writing therapy that is effective in treating certain traumatic symptoms (Zhu et al., 2014). Similar to other writing therapy approaches, theorists posit that calligraphy integrates bio-emotional responses, cognitive functioning, and sensory feedback (Xu, Kao, Zhang, Lam, & Wang, 2013), thereby potentially making calligraphy an effective treatment to posttraumatic symptoms.

**Integrative Expressive Therapy**

Whereas some studies have considered the specific benefits of individual types of expressive therapies, some studies focus on the use of two or more types of expressive therapies through an integrative approach. These studies emphasize that incorporating multiple expressive arts demonstrate good outcomes, especially when implemented with refugee children and adolescents (Fitzpatrick, 2002; Rousseau, Drapeau, Lacroix, Bagilishya, & Heusch, 2005). Modalities such as the Psychosocial Structured Activities (PSSA) intervention intentionally incorporates expressive therapies, including play, drama, movement, and art in the program. The PSSA has been found effective in helping children develop “resilience and feelings of stability and security after trauma” (Ager et al., 2011, p. 1125). For this reason, past studies have found the PSSA as an effective intervention approach with refugee and displaced children that incorporates several expressive therapies.
The effect of integrating several different expressive therapies has also been explored in the yourtown Expressive Therapies Intervention (YETI) program (Southwell, 2016). The program integrates several types of expressive therapies for the purpose of addressing trauma-informed and attachment issues in children. Southwell (2016) cites Malchiodi’s (2005) work in emphasizing the integrative nature of expressive therapies that focus on multiple functions of the body, mind, and emotions. Such integration activates nonverbal expressions and thoughts. For this reason, the YETI program was found to be effective in increasing positive behavioral outcomes in children suffering from trauma and attachment issues.

Furthermore, some clinicians agree that expressive therapies are beneficial when integrated with other types of trauma-focused therapies (Cohen, Mannarino, & Deblinger, 2012). Art and play therapy, for example, may be an effective strategy when used with trauma-focused cognitive behavioral therapy. Other studies consider forms of expressive therapies as distinct approaches that require separate analyses when comparing with other evidence-based interventions such as cognitive behavioral therapy, psychodynamic therapy, or pharmacological therapy (Wethington et al., 2008).

**Expressive Therapies as an Alternative to Other Trauma-Informed Approaches**

In investigating the effectiveness of therapeutic approaches among refugee children and adolescents, many studies have focused on specific trauma-informed approaches that address trauma-related symptoms. Approaches such as cognitive behavioral therapy, eye movement desensitization and reprocessing, and narrative exposure therapy typically emerge as effective treatments for children and adolescents traumatized by man-made and natural disasters (Brown et al., 2017; Lambert & Alhassoon, 2015; Wethington et al., 2008). Yet, the effectiveness of these evidence-based therapies may be lessened amidst cultural differences and unskilled
counselors (Bemak & Chi-Ying Chung, 2017). For this reason, expressive therapies should be considered as appropriate trauma-informed modalities that address neurological, sociological, and cultural intricacies related to refugee trauma (Every et al., 2017; Killian et al., 2017).

Furthermore, as previously discussed, a neurobiological understanding of the effects of trauma help motivate the use of expressive therapies when treating children and adolescents. The nonverbal expression implemented through expressive therapies are hypothesized to be more effective than verbally-focused therapeutic approaches (Gaskill & Perry, 2014). This hypothesis is based on the awareness that the limbic system may be dominating the traumatized victims’ cognitive functioning, interfering with linguistic, auditory, and executive functioning. A therapeutic response should first, therefore, address the limbic system before treating prefrontal thinking (Uhernik, 2017). Expressive therapies may provide an effective bridge to cut through the dysregulation in the limbic system, thereby reaching the prefrontal cortex (Sweeney et al., 2014).
CHAPTER THREE: METHODS

Overview

In responding to the problem statement and research question articulated in Chapter One and the review of literature in Chapter Two, it is important to clearly discuss and present methodical issues. In this chapter, the meta-analytical design is presented as a means to justify the chosen research design. In doing so, the motivation in choosing the random effects model as a specific type of a meta-analysis is explained. Then the research question, procedures of the study, and data analysis methods are outlined. The overall purpose of this chapter is to orientate the reader to the methods in conducting this study in response to the identified research gap.

Design

Davis et al. (2014) describe a meta-analysis as a statistical technique used “to combine results across studies to determine an overall effect” (p. 511). The method of meta-analysis can be further described as the process of determining the overall effect of one or more variables by combining findings from more than one study (Bryman, 2004). That is, combining the results of several studies may test the overall hypothesis more effectively (Wampold, Ahn, & Kim, 2000). Meta-analytical procedures provide the mechanism to synthesize data from studies that meet specified and objective inclusion criteria (Borenstein, Hedges, Higgins, & Rothstein, 2010), thereby yielding an overall effect size. This overall effect size increases the validity of findings when determining both statistical and clinical significance.

For this study, a meta-analysis provides this mechanism needed to combine the results of a series of studies that have investigated the effect of expressive therapies in treating trauma-related symptoms in children and adolescents impacted by refugee trauma. As previously stated, there are few studies that have quantitatively measured the effect of expressive therapies on the
refugee population, especially on children and adolescents. Since the validity of a single study increases when combined with other studies that have tested similar hypothesis (Borenstein et al., 2010), a meta-analytical design was chosen in this study. This author recognizes the need to contribute to the body of research that potentially shapes trauma-focused modalities; meta-analytical findings provide statistical data that help understand treatment effect. Combining effect sizes of studies that have been objectively chosen based on pre-identified selection criteria will yield a more powerful overall effect size, thereby increasing validity and clinical implications (Borenstein, Hedges, Higgins, & Rothstein, 2009). Therefore, meta-analytical findings will answer this study’s research question by providing measurable effect sizes.

**Random Effects Model**

This study implements a *random effects model* of meta-analysis to investigate the effect of expressive therapies in helping refugee children and adolescents cope with trauma caused by forced migration. A *random effects model* of meta-analysis (Hunter & Schmidt, 2004) is used as opposed to a *fixed effect model*. Whereas both models combine the estimates of a particular effect, the random effects model assumes that the true effect differs from study to study due to between-study variability associated with sample size and error of variance. The fixed model, on the other hand, assumes a common treatment effect among all studies, thereby claiming that all variation occurs only because of chance rather than true differences in treatment effect (Riley, Higgins, & Deeks, 2011). Hunter and Schmidt (2015) suggest that a random effects model of meta-analysis may be a more accurate method in identifying a true effect since it does not assume homogeneity.

Furthermore, Borenstein et al. (2010) describe the random effects model as measuring the variation of effect across studies within an identified “universe” population. In this universe,
there is some degree of heterogeneity in a between-study analysis, although the studies are measuring the same effect. The fixed effect model, on the other hand, measures the variation of effect across the same population. The fixed effect model, therefore, may be more effective when there is strong homogeneity among all the studies. Typically, however, social science research imposes heterogeneity issues caused by assumptions pertaining to population differences and causal inferences (Xie, 2013). For this study, the random effects model of meta-analysis is chosen due to the heterogeneity characterized by different expressive therapy modalities, refugee populations, and assessment tools between-studies.

In calculating the between-study variation, Borenstein et al. (2010) propose the addition of tau-squared ($T^2$) as a factor when determining a study’s weight in the overall effect. That is, in the random effects model, $T^2$ describes how much the true effect varies from study to study based on sample size, error of variance, and distance from mean. In the fixed effect model, only sample size influences the weight in the overall effect analysis. The following formulas depict the differences between the two models when the $T^2$ is incorporated into the calculation (Borenstein et al., 2010):

\[
W = \frac{1}{\nu} \quad W = \frac{1}{\nu + T^2}
\]

Fixed Effect Model \quad Random Effects Model

$W = \text{Weight}$
$\nu = \text{Variance from overall mean}$

$T^2 = \text{Variance between studies}$
Even though all of the studies measure the effect of a type of expressive therapy in treating refugee trauma, this meta-analysis recognizes the importance of evaluating the level of heterogeneity. Heterogeneity considers the difference between studies, not due to sampling error or random chance. The I² score describes the percentage of variation across all of the included studies that represents true heterogeneity rather than sampling error or random chance (Borenstein et al., 2010). In this meta-analysis, heterogeneity will be quantified with the I² and T² scores as calculated by Comprehensive software.

Meta-Analysis Research Gap

Various meta-analyses have been conducted that focus on the effect of specific types of trauma-focused therapies (Lambert & Alhassoon, 2015), specific types of trauma (Brown et al., 2017), specific types of expressive types (Koch et al., 2014), and specific predictors to trauma symptoms (Aliscic, Jongmans, van Wesel, & Kleber, 2011). For example, in specifically considering the effect of play therapy intervention on children, Ray and McCullough (2015; revised 2016) refer to four past meta-analytical studies (Lin & Bratton, 2015; Ray et al., 2015: Bratton et al., 2005; LeBlanc & Ritchie, 2001). These meta-analyses found that play therapy is associated with favorable outcomes related to externalizing and internalizing behavior problems, caregiver-child relationship stress, self-efficacy, academic issues, and family adjustment.

Overall, meta-analyses help contribute to the evidence-based practice of play therapy, thereby formulating further recommendations for practice (Ray & McCullough, 2015; revised 2016). However, no meta-analyses have been found that consider the overall effect size of several types of expressive therapies specifically on the child and adolescent refugee population. A research gap, therefore, pertains not only to a need for a meta-analysis that combines several types of expressive therapies, but also for a meta-analytical investigation of the effect of several...
types of expressive therapies specifically on the child and adolescent refugee population. In response to this need, a gap in research calls upon meta-analytical findings amidst the growing need to address refugee trauma. This study responds to this meta-analysis research gap.

A meta-analysis design is implemented since it collects, measures, and analyzes existing data on this topic. Meta-analytical findings, therefore, yield results that help conceptualize and evaluate the effectiveness of expressive therapies in treating child and adolescent victims of refugee trauma. Although the overall combined effect size of expressive therapies is beneficial in determining the general effectiveness of this chosen modality, this research design also provides the mechanism to compare the effect sizes among the different types of treatments. That is, this meta-analytical design responds to the current research gap by 1) yielding an overall effect size of expressive therapies in treating refugee children and adolescents and by 2) creating a mode of comparison among the different types of expressive therapies included in this meta-analysis.

**Research Question**

The research question plays an important role in constructing the correct research design. Davis et al. (2014) note that a meta-analysis is a specific type of statistical procedure that seeks to answer a narrow range of research questions. It is, therefore, important to clearly articulate the research question to determine whether a meta-analysis is an appropriate type of design to effectively answer the question. Furthermore, in constructing an effective meta-analysis design, it is important to include studies that ask the same research question (Wampold, Ahn, & Kim, 2000). Therefore, the articulated research question in this study is used as the basis for the inclusion criteria in this meta-analysis.
In response to the importance of understanding effective treatment strategies for children and adolescents impacted by trauma related to forced migration, this study uses a meta-analysis of existing quantitative studies to answer the following research question:

**RQ**: Are expressive therapies effective in treating trauma-related symptoms in refugee children and adolescents impacted by forced migration?

**Procedures**

In outlining the procedures for this study, it is first important to identify problematic areas related to conducting meta-analyses in social science research. Davis et al. (2014) delineate four practical issues relevant to designing and conducting a meta-analysis: 1) ensuring that a meta-analysis is appropriate for the research question; 2) choosing correct eligibility criteria for the meta-analysis; 3) dealing with inconsistent reporting among the studies; 4) attempting moderator analysis when there are multiple confounded moderators. For the purpose of this section, the second practical issue is dealt with when describing and establishing the eligibility criteria and inclusion procedures. Then, the third practical issue is considered in the following data analysis section of this chapter.

**Selection Procedure**

Electronic databases were thoroughly searched, including PsycLIT, PsycINFO, MEDLINE, ERIC, Dissertation Abstracts, and Google Scholar. Key words included *displacement, migration, trauma, refugee, children, adolescents, youth, expressive therapy(ies)*, in addition to the specific types of expressive therapies previously described, including *art therapy, play therapy, music therapy, sandtray/sand therapy, drama/movement therapy, writing*. An initial database search yielded 1,636 articles. Most were either duplicates or reviews, reports, and discussion-focused publications and were therefore excluded from the search. A subsequent
scan then reviewed the outlined selection criteria. Articles \( n = 291 \) were excluded for not involving children or adolescent participants and/or not specifically assessing the effect on refugee populations. Reference lists in the articles were also scanned for any relevant studies that were not yet included.

*Figure 1. Study Selection Process*
Despite topical relevancy, several studies (n = 34) were excluded for not yielding quantitative data due to their qualitative design. For example, Harris (2007) conducted a qualitative study that investigated the effect of dance/movement therapy with adolescent boys impacted by political conflict in Sierra Leone. Although this study investigated the effect of a type of expressive therapy on forced displacement, it implemented a qualitative analysis of dance/movement intervention, yielding thematic data based on observations. For this reason, the study was excluded from this meta-analysis due to its lack of quantitative data needed to calculate and compare mean scores. Additionally, Kronick, Rousseau, and Cleveland (2017) explored the impact of sand play with immigrant children (aged 3-13) detained in Canadian centers. Although results of this study match the aim of this meta-analysis, the authors implemented a qualitative analysis in their inquiry; hence, the study was excluded in this meta-analysis. Other excluded studies, due to their yielding of qualitative findings, included Lacroix et al.’s (2007) analysis of symbols created in sand play among immigrant preschoolers and Every et al.’s (2017) use of open-ended questions in exploring animal-assisted therapy with refugee children. Although results of these qualitative studies were not included in this meta-analysis due to their non-quantitative results, their findings have contributed substantially to this study’s review of literature and discussion.

Furthermore, in expanding the search procedure for candidate literature, specific organizations were contacted, due to their appearance in literature, to inquire on available research related to this topic. These organizations include: The Association for Play Therapy, The Theraplay Institute, The World Awareness for Children in Trauma, Mercy Corps, and International Rescue Committee. These organizational searches only yielded manuscripts already selected for inclusion. Finally, two studies were excluded for not reporting enough data
necessary for calculating either a pre-post or between-group effect size necessary for this meta-analysis. One study (Meyer DeMott et al., 2017) investigated the effect of expressive therapies on treating posttraumatic symptoms and enhancing life satisfaction among unaccompanied minors, whereas the second study (Björn et al., 2013) measured the effect of the Erica play diagnostic model for refugee children. The authors were contacted to request additional data, including pre-post mean differences and standard deviation; however, data was not obtained in time for data analysis and therefore were not included in this study. Seventeen studies were included in this meta-analysis after conducting this selection procedure.

**Selection Criteria**

In following Borenstein et al.’s (2010) emphasis on creating a “universe” population when conducting a random effects model of meta-analysis, it is important to identify specific inclusion criteria. Studies that satisfy the following inclusion criteria became initial candidates for inclusion in the meta-analysis:

- **Research question.** This criterion considers whether the study is investigating the effectiveness of a type of expressive therapy in treating children and adolescents impacted by forced displacement. In evaluating this criterion, the study’s aim and purpose should match the research question established in this study.

- **Intervention focus.** This criterion evaluates studies that quantitatively investigated the effectiveness of one of the types of expressive therapies outlined in this study, including art, play, sandtray, dance/movement, music, writing, and integrative expressive therapies that use two or more of any of these types of therapies.
- **Instrument(s) used.** This criterion considers studies that implemented any type of measure to assess the effects of trauma, including posttraumatic stress symptoms/disorder, depression, self-esteem, life satisfaction, hope, or anxiety.

- **Sample size.** A study that analyzes any sample size qualified for inclusion.

- **Sample population.** A study that considered the effect of expressive therapies on a population impacted by forced migration caused by war, conflict, violence, persecution, or natural disaster qualified for inclusion. Displacement may result in either internal migration (Internally Displaced Persons within the victim’s home country) or external migration (outside victim’s home country). The key characteristic of the sample is that displacement has occurred due to forced migration.

- **Age range of sample.** Any study that considered the effectiveness of expressive therapies on participants aged 0 to 20 qualified for inclusion. This study operationally defined children and adolescents within this age range. The sample can be identified as either an accompanied or non-accompanied minor.

- **Study design.** Any design that yields quantitative data, either by pre-post test or comparative design, for the purpose of measuring the effectiveness of expressive therapies qualify for inclusion.

- **Study setting.** The study measurement may occur in any setting, including school, refugee camp, hospital, or family. No specific criteria were establish pertaining to the setting of the study.

**Data Analysis**

Descriptive statistics were performed to note information outlined in the previous section, including the authors, publication date, sample information, country where the study took place,
and sample size. Studies were first coded based on 1) the type of design (e.g. pre- and post- test, between group comparison), 2) the type(s) of expressive therapy implemented, and 3) the type of symptoms assessed. Then, outcomes were coded to identify specific measured effects for comparison purposes. Data was abstracted from all studies to calculate combined effect sizes on pre- and post-tests. This method of data analysis allows for all studies to be included in the combined effect size regardless of their study designs. Then, separate effect sizes were calculated on studies that implemented a between group comparison, either with a control group or with another type of trauma-informed treatment modality.

**Calculation of Mean Effect Size**

The purpose in analyzing these existing studies is to identify the effect of these varied types of expressive therapies while also individually assessing the effectiveness of individual approaches to expressive therapy. The effect size was calculated using the Hedges’ g statistical procedure (Hedges & Olkin, 1985), where:

\[
Hedges' \ g = \frac{M_1 - M_2}{SD_{\text{pooled}}}
\]

\(M_1 - M_2\) = difference in means

\(SD_{\text{pooled}}\) = pooled and weighted standard deviation, where:

\[
SD_{\text{pooled}} = \sqrt{\frac{(n_1 - 1)SD_1^2 + (n_2 - 1)SD_2^2}{n_1 + n_2 - 2}}
\]

Furthermore, to correct for bias when calculating the effect size for small samples \((n \leq 20)\), the following formula is multiplied to the above \(SD_{\text{pooled}}\) formula:

\[
\frac{n - 3}{n - 2.25} \sqrt{\frac{n - 2}{n}}
\]
Hedges’ $g$ is chosen over the Cohen’s $d$ statistical procedure since it has been found to be favorable when calculating the effect size for smaller samples (under 20). When conducting the meta-analysis computations, the effect sizes were weighted according to their sample size and between-study variance based on the previously described formula for the random effects model:

$$W = \frac{1}{V_1 + T^2}$$

An effect size of $g$ can be understood as the measurement in which two groups differ from one another. The greater value of $g$, therefore suggest a greater standard deviation in the differentiation of means, and therefore greater measured effect. In interpreting effect sizes, the following conventional values (Durlak, 2009), also used when interpreting Cohen $d$ values, were used:

**Small**  \[ g \geq 0.20 \]
**Medium** \[ g \geq 0.50 \]
**Large** \[ g \geq 0.80 \]

Furthermore, in calculating the overall effect size, a confidence interval (CI) of 95% was used to determine statistical significance. Sánchez-Meca and Marín-Martínez (2008) note that “one of the main objectives in meta-analysis is to obtain an average effect-size estimate from a set of independent effect-size estimates and to calculate a CI around it to estimate the parametric effect size, $\mu$” (p. 32). It is also important to calculate the CI using a method that supports the random effects model of meta-analysis. The Hunter and Schmidt (HS) estimator (1990), considers the heterogeneity variance by calculating differences among between-study means.

The data were analyzed meta-analytically, using *Comprehensive Meta-Analysis (CMA), Version 3* software (Borenstein, Hedges, Higgins, & Rothstein, 2013). This software was chosen due to its specialization in calculating the effect size using the random effects model (Borenstein
et al., 2010), its ability to create forest plots, and its accessibility to customer support.

Furthermore, this software emerged in other meta-analytical studies as an effective procedure to calculate overall effect sizes using a random effects method (Brown et al., 2017; Guttermann et al., 2016). CMA calculates the weighted and pooled mean effect sizes between-studies. The effect sizes from all included studies were compared against the line of null effect to calculate a meta-analytical effect size. These results will help answer the research question by 1) analyzing the general meta-analytical effect size, and 2) comparing the differing effects of the varying types of expressive therapies when compared to the line of null effect.

**Limitations to Research Design**

A common problem in conducting a meta-analysis is publication bias among the studies included in the study (Reinhold, Burkner, & Holling, 2017). Furthermore, sources of heterogeneity emerge as an important issue that should be considered when conducting a meta-analysis (Davis et al, 2014). For this reason, a random effects model was chosen to address issues of heterogeneity that could potentially skew results derived from a fixed effect model. In this study, a meta-analysis provides an important opportunity to measure the effect of expressive therapies across several studies. It may be difficult, however, to conclude whether the effect is attributed to the type of treatment or the type of study design and sample. Since this study has included research that has specifically investigated the effects of therapy on refugee children and adolescents, homogeneity increases with the limited scope of a population “universe,” as described by Borenstein et al.’s (2010). Nevertheless, the diversity among populations and the broad spectrum of moderators associated with forced migration and trauma-related symptoms suggest that issues of heterogeneity may skew the measured effect.
Ethical Considerations

Since this study did not involve direct participation from human subjects, there are few ethical considerations pertaining to the potential risk on others. The research design was submitted to Liberty University’s Institutional Review Board (IRB) per the Office of Human Research Protections protocol. The research design was approved by the IRB (see Attachment A) and was classified as non-human subjects research. Nevertheless, ethical considerations should be noted in light of possible interpretations that this study may yield. Any study that makes conclusions that may potentially direct treatment practices pose ethical risks. For example, a practitioner may interpret the effect sizes yielded in this study a certain way that impacts which type of treatment modality is offered to the refugee population. In this study’s effort to contribute to the body of research and knowledge based pertaining to the best treatment practices for refugee children and adolescent, this author recognizes that although this study does not directly involve human subjects, they may be indirectly impacted by the findings of this study. For this reason, this author advises that lay and professional counselors working with refugees continue to explore evidence-based approaches and implement practices that work best for their clients.
CHAPTER FOUR: FINDINGS

Overview

This chapter reports the findings of the meta-analysis. First, descriptive statistics pertaining to the studies included in this meta-analysis are presented. Descriptive statistics provide an important means to understand the sampling population, types of instruments implemented, modalities of expressive therapies tested, and methods of research design used. Then, results of the data analysis are presented. Effect sizes were calculated based on pre-post and between-group analyses. Inferential findings related to these analyses are presented based on various calculations of pre-post, between group comparison, and by treatment type comparisons.

Descriptive Statistics

After conducting a thorough search based on the inclusion criteria, 17 studies were included in this meta-analysis. The accumulative sample population (n = 2,665) originated from diverse cultural backgrounds, with the majority (n = 11) of the studies specifically focusing on an identified impacted population, including Uganda, Syria, Afghan, Gaza, China, Indonesia, India, and Thailand (see Table 1 for comparative demographics of included studies). The remaining studies (n = 6) including impacted children and youth from mixed origins. Typically, the studies that measured a sample from several countries conducted their study in a country of settlement (Australia, Canada, and the United States); hence, the study setting depicts a diverse global population of migrating refugees. Since most studies did not provide a mean age of participants, it is not possible to calculate a mean age across all studies. Yet, the overall range of age is reportable, spanning from 6 to 20 years.
Table 1

*Study Characteristics and Demographics*

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>n</th>
<th>Age (range or mean when available)</th>
<th>Place of Origin</th>
<th>Population</th>
<th>Design</th>
<th>Treatment</th>
<th>Instruments</th>
<th>Outcome Measures</th>
<th>Coded Outcome Categories</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ager et al.</td>
<td>2011</td>
<td>403</td>
<td>7 -12</td>
<td>Uganda</td>
<td>Orphans; conflict-induced displacement</td>
<td>Comparative Pre-post</td>
<td>PSSA</td>
<td>EI</td>
<td>Well-being (parent, child, and teacher perspective)</td>
<td>Well-being</td>
<td>School</td>
</tr>
<tr>
<td>Bolton et al.</td>
<td>2007</td>
<td>314</td>
<td>14 – 17</td>
<td>Acholi (Uganda)</td>
<td>Displaced youth living in camps</td>
<td>Comparative with control and Group Interpersonal Psychotherapy</td>
<td>Creative Play</td>
<td>APAI</td>
<td>Depression</td>
<td>Depression</td>
<td>Refugee Camps</td>
</tr>
<tr>
<td>Kalantari et al.</td>
<td>2012</td>
<td>61</td>
<td>12 – 18</td>
<td>Afghan</td>
<td>Conflict-induced displacement</td>
<td>Comparative</td>
<td>Writing for Recovery</td>
<td>TGIC</td>
<td>Grief</td>
<td>Depression</td>
<td>School for Refugees</td>
</tr>
<tr>
<td>Lange-Nielsen et al.</td>
<td>2012</td>
<td>139</td>
<td>12 – 17</td>
<td>Gaza</td>
<td>Conflict-induced displacement</td>
<td>Comparative</td>
<td>Writing for Recovery</td>
<td>DSRC RCMAS CRIES 13</td>
<td>Post-traumatic stress symptoms, anxiety, depression</td>
<td>Stress Anxiety Depression</td>
<td>Schools in Refugee Camps</td>
</tr>
<tr>
<td>Moosa et al.</td>
<td>2017</td>
<td>30</td>
<td>14 – 18</td>
<td>India</td>
<td>Refugee children</td>
<td>Pre-post</td>
<td>Art therapy (solution focused)</td>
<td>DASS-21</td>
<td>Depression Anxiety Stress</td>
<td>Stress Anxiety Depression</td>
<td>Refugee Camps</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Sample Size</th>
<th>Age Range</th>
<th>Region</th>
<th>Intervention Type</th>
<th>Control Group</th>
<th>Outcome Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ojiambo et al.</td>
<td>2014</td>
<td>60</td>
<td>10 – 12</td>
<td>Uganda</td>
<td>Orphans; conflict-induced displacement</td>
<td>GAPT</td>
<td>CBCL-P TRF Externalizing/Internalizing Problem behaviors</td>
</tr>
<tr>
<td>Quinlan et al.</td>
<td>2016</td>
<td>42</td>
<td>15 (M)</td>
<td>Global</td>
<td>Newly arrived refugee children in Australia</td>
<td>Art therapy</td>
<td>HSCL-25 SDQ Anxiety Symptoms, Depression Symptoms, Total difficulties</td>
</tr>
<tr>
<td>Rousseau et al.</td>
<td>2009</td>
<td>105</td>
<td>5.3 (M)</td>
<td>Global</td>
<td>Newly arrived refugee and immigrant children in Canada</td>
<td>Pre-post</td>
<td>SDQ Emotional and behavioral symptoms</td>
</tr>
<tr>
<td>Rousseau et al.</td>
<td>2014</td>
<td>477</td>
<td>Grades 7 – 8</td>
<td>Global</td>
<td>Refugee and immigrant youth in Canada with academic delay</td>
<td>Theatre Workshops</td>
<td>SDQ Self-report of distress, social impairment, and burden for others</td>
</tr>
<tr>
<td>Rousseau et al.</td>
<td>2014</td>
<td>477</td>
<td>Grades 7 – 8</td>
<td>Global</td>
<td></td>
<td>Theatre Workshops</td>
<td>SDQ Well-being School</td>
</tr>
<tr>
<td>Study</td>
<td>Year</td>
<td>Sample Size (n)</td>
<td>Age Range (M)</td>
<td>Location</td>
<td>Group Type</td>
<td>Intervention</td>
<td>Domain Measures</td>
</tr>
<tr>
<td>------------------</td>
<td>------</td>
<td>--------------------</td>
<td>---------------</td>
<td>----------</td>
<td>------------</td>
<td>--------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Schottelkorb et al.</td>
<td>2012</td>
<td>38</td>
<td>6 – 13</td>
<td>Global</td>
<td>Refugee children in United States</td>
<td>Comparative with control and TF-CBT</td>
<td>CCPT UCLA PTSD PROPS, Freedom from anxiety, Social competence, Health and Well-being</td>
</tr>
<tr>
<td>Shen</td>
<td>2002</td>
<td>30</td>
<td>Grades 3 – 6</td>
<td>China</td>
<td>Children impacted by earthquake</td>
<td>Group Play Therapy</td>
<td>CMHC FPC RCMAS MDI-C, Anxiety, depression, adjustment, School adjustment</td>
</tr>
<tr>
<td>Tol et al.</td>
<td>2008</td>
<td>495</td>
<td>9.9 (M)</td>
<td>Indonesia</td>
<td>Children impacted by political-violence</td>
<td>Cooperative Play, Creative Expressive Exercises (drama, dance, music)</td>
<td>CPTSS DSRC SR-ARD 5 CHS, Posttraumatic stress symptoms, Depression, Anxiety, Well-being</td>
</tr>
<tr>
<td>Ugurlu et al.</td>
<td>2016</td>
<td>64</td>
<td>7 – 12</td>
<td>Syria</td>
<td>Refugee children in Turkia</td>
<td>Pre-post Art</td>
<td>SLE UCLA PTSD (Parent) CDI STAS, PTSD Anxiety Depression, Stress Anxiety, Depression</td>
</tr>
<tr>
<td>Zhu et al.</td>
<td>2014</td>
<td>208</td>
<td>10.5 (M)</td>
<td>China</td>
<td>Children impacted by earthquake</td>
<td>Comparison Writing (calligraphy)</td>
<td>CRIES 13 Salivary Cortisol, Stress Anxiety, Stress Depression, No data</td>
</tr>
</tbody>
</table>
The type of trauma among the studies is also diversified, with several specifically investigating refugee migration due to conflict and violence (n = 9). Other studies considered refugee status without specifically stating cause (n = 6), while two studies considered trauma related to a natural disaster (earthquake). The studies were conducted in diverse settings, with the assessments being carried out in schools (n = 11), refugee camps (n = 2), schools within refugee camps (n = 2), and community center (n = 1). One study provided no data on the study’s setting (Zhu et al., 2014). Furthermore, several expressive therapy modalities were investigated among the 17 included studies. These included different approaches to art therapy (Moosa et al, 2017; Quinlan et al., 2016; Rowe et al., 2017; Ugurlu et al., 2016), play therapy (Bolton et al., 2017; Ojiambo et al., 2014; Schottelkorb et al, 2012; Shen, 2002; Tol et al., 2008), writing therapy (Kalanari et al., 2012; Lange-Nielson et al., 2012; Zhu et al., 2014), sandplay (Rousseau et al., 2009), music (Baker et al., 2007, theater (Rousseau et al., 2014), and integrative approaches that incorporate two or more types of expressive therapies (Ager et al., 2011; Rousseau et al., 2005).

Among the different categories of expressive therapy modalities, diversity in programs and models should also be noted. For example, among the five studies that examined play therapy, each study considered a different approach and variation, including Creative Play (Bolton et al., 2007), Group Activity Play Therapy (Ojiambo et al., 2014), Child Centered Play Therapy (Schottelkorb et al., 2012), Group Play Therapy (Shen, 2002), and corporate play (Tol et al., 2008). Similarly, among the four studies that investigated art therapy, one measured a solution-focused approach to art therapy (Moosa et al., 2017), while the other three considered a more traditional approach to art therapy. For the purpose of this study, these fine categories of expressive therapies were created in the data analysis and comparative assessment.
Most of the 17 studies (n = 11) implemented a between-group design comparing the effect with a control group. Two of the studies compared the expressive therapy group with another modality of treatment, including Group Interpersonal Psychotherapy (Bolton et al., 2007) and Trauma-Focused Cognitive Behavioral Therapy (Schottelkorb et al., 2012). Ojiambo et al. (2014) compared the play therapy group with reading mentoring, designated it as an “active control group.” Three of the 17 (Moosa et al., 2017; Rowe et al., 2017; Ugurlu et al., 2016) studies implemented solely a pre-post design with no between-group comparisons. One of the studies (Baker et al., 2012) conducted a cross-over time design on the effect of music therapy; results from this study were extracted only for the pre-post data analysis.

Table 2

List of Instruments Used in Included Studies

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Name of Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>APAI</td>
<td>Acholi Psychosocial Assessment Instrument</td>
</tr>
<tr>
<td>BASC</td>
<td>Behavior Assessment Scale for Children</td>
</tr>
<tr>
<td>CBCL-P</td>
<td>Child Behavior Checklist – Parent Version</td>
</tr>
<tr>
<td>CHS</td>
<td>Children’s Hope Scale</td>
</tr>
<tr>
<td>CMHC</td>
<td>Children’s Mental Health Checklist</td>
</tr>
<tr>
<td>CPTSS</td>
<td>Child Post Traumatic Stress Scale</td>
</tr>
<tr>
<td>CRIES 13</td>
<td>Revised Child Impact of Event Scale 13</td>
</tr>
<tr>
<td>DASS-21</td>
<td>Depression, Anxiety, and Stress Scale</td>
</tr>
<tr>
<td>DSRC</td>
<td>Depression Self-Rating Scale for Children</td>
</tr>
<tr>
<td>EI</td>
<td>Ethnographic Interviewing</td>
</tr>
<tr>
<td>FPC</td>
<td>Filial Problem Checklist</td>
</tr>
<tr>
<td>HSCL 25</td>
<td>Hopkins Symptoms Checklist 25</td>
</tr>
<tr>
<td>HTQ</td>
<td>Harvard Trauma Questionnaire</td>
</tr>
<tr>
<td>MDI-C</td>
<td>Multiscore Depression Inventory for Children</td>
</tr>
<tr>
<td>PHSCS</td>
<td>Piers-Harris Self-Concept Scale</td>
</tr>
<tr>
<td>PROPS</td>
<td>Parent Report of Posttraumatic Symptoms</td>
</tr>
<tr>
<td>RCMAS</td>
<td>Revised Children’s Manifest Anxiety Scale</td>
</tr>
<tr>
<td>SDQ</td>
<td>Strengths and Difficulties Questionnaire</td>
</tr>
<tr>
<td>SLE</td>
<td>Stressful Life Events</td>
</tr>
<tr>
<td>SR-ARD 5</td>
<td>Self-Report Anxiety Related Disorders 5</td>
</tr>
<tr>
<td>STAS</td>
<td>State-Trait Anxiety Scale</td>
</tr>
<tr>
<td>TGIC</td>
<td>Traumatic Grief Inventory for Children</td>
</tr>
<tr>
<td>TRF</td>
<td>Teacher Report Form</td>
</tr>
<tr>
<td>UCLA PTSD</td>
<td>UCLA Post Traumatic Stress Disorder Index (Parent) and (Child) version</td>
</tr>
</tbody>
</table>
Twenty-four different assessments were used to measure outcomes related to trauma-related symptomology (see Table 2), including anxiety, depressive, and posttraumatic stress symptoms. Externalizing and internalizing behaviors, general well-being, hope, and grief were also common constructs measured among the 17 studies. Many of the authors justified their use of chosen instruments, citing reliability and validity findings that support their appropriateness in measuring outcomes. Some authors also chose their instrument tools due to cultural and language motivations.

Based on the used instruments and measured outcomes among the 17 studies, six outcome categories were created: stress, anxiety, depression, well-being, internalizing behaviors, and externalizing behaviors. The purpose of coding outcomes was to limit and refine the number of outcomes among the 17 studies. Measured outcomes were coded based on the scope of the implemented instruments and/or the authors’ use of specific descriptors. See Table 1 for the coded outcome measures that were identified for each study based on the assessed outcomes and symptoms. In most cases, studies specifically used instruments and terminology that matched one of the six coded outcome categories. For example, depression and anxiety were specific outcomes that were categorized as such and therefore translated into the appropriate coded outcome. Outcomes that measured posttraumatic stress disorder or symptoms were categorized in the stress category. In the study by Zhu et al. (2014), hyperarousal was coded as anxiety. Furthermore, in the study by Shen (2002), the outcome “arousal” was coded as anxiety, whereas the measurement of salivary cortisol was coded as stress.

Another study (Kalantari et al., 2012) measured grief as an outcome of refugee trauma. For the purpose of this meta-analysis, grief was identified as a construct of depression and was coded accordingly. Externalizing and internalizing behaviors were also outcomes measured by
five of the 17 studies. All of the studies except one (Rowe et al., 2017) used specific terminology to identify externalizing and internalizing behavior and symptoms. In Rowe et al.’s (2017) study, the authors’ measured “intellectual and school status and behavioral adjustment” as overall scores. These measurements were coded as internalizing and externalizing behaviors accordingly.

Well-being also emerged as a more generic code to fit studies’ attempt to assess the general level of resiliency to refugee trauma. One study (Ager et al., 2011) used the terminology well-being when implementing ethnographic interviewing to assess displacement adjustment; results for this study were therefore coded as well-being. Another study (Quinlan et al., 2016) used the Strengths and Difficulties Questionnaire (SDQ) and Hopkins Symptoms Checklist (HSCL-25) to assess “total difficulties.” Subcategories of this outcome summary include hyperactivity, emotional symptoms, conduct problems, peer problems, and prosocial behavior. The “total difficulties” score is an accumulation of these symptoms to assess general adjustment and well-being. For the purpose of coding in this meta-analysis, the total difficulties scores were coded as well-being. It should be noted that Quinlan et al. (2016) also measured for anxiety and depression using these two instruments, and scores for these outcomes were coded accordingly.

Furthermore, Tol et al. (2017) assessed hope as a measurable outcome among children impacted by political violence. For the purpose of this meta-analysis, hope was coded as a construct of well-being. Lastly, in addition to anxiety, Rowe et al. (2017) also measured for “happiness and satisfaction.” However, statistical data on happiness and satisfaction necessary to calculate an effect size were not included in the article, so only anxiety scores were extracted in this meta-analysis.
Finally, results from the 17 studies derived from varying reporters. For example, most studies calculated scores pertaining only to the child, either via a self-report or a clinician’s assessment (Baker et al., 2017; Bolton et al., 2007; Kalantari et al., 2012; Moosa et al., 2017; Quinlan et al., 2016; Rousseau et al., 2014; Rowe et al., 2017; Schottelkorb et al., 2012; Shen, 2002; Tol et al, 2008; Ugurlu et al., 2016; Zhu et al, 2014). Other studies used data derived from instruments that measure teachers’ and/or parents’ assessments of the children’s symptoms (Ager et al., 2011; Ojiambo et al., 2014; Rousseau et al., 2005; Rousseau et al., 2009). In this meta-analysis, when studies measured the same outcome with data derived from more than one reporter, a separate effect size was calculated for each reporter. For example, in the study by Ojiambo et al. (2014), both child and teacher assessments were used to measure stress, anxiety, and depressive symptoms. In this case, a separate effect size was calculated for each of these three outcomes as reported by the child and as reported by the teacher.

Results

Pre-Post Results

The combined random effects analysis on all pre-post outcomes yielded an effect size of 0.58, 95% CI [0.46, 0.70]. This combined effect size is calculated when treating each outcome independently across all the studies (see Figure 2 and Table 4). When combining all the outcomes per study as a mean score, the combined effects analysis on all pre-post outcomes lowers slightly to 0.55, 95% CI [0.39, 0.71]. When calculating the effect sizes on specific coded outcomes, the combined random effect size for stress was 0.95, 95% CI [0.48, 1.42], for depression 0.45, 95% CI [0.22, 0.69], for anxiety 0.49, 95% CI [0.18, 0.79], for well-being 0.53, 95% CI [0.30, 0.77], for internalizing behaviors 0.63, 95% CI [0.28, 0.97], and for externalizing
behaviors 0.56, 95% CI [0.23, 0.90]. All of these effect sizes are statistically significant ($p < .001$) with the exception of anxiety’s effect size which is statically significant at a $p = .002$ value.

Based on the previously stated interpretation of effect sizes, the overall combined effect on all pre-post outcomes is medium. When considering individual effect sizes by outcome, only stress yielded a high effect size. Anxiety and depression were found to have small effect sizes, though changes in their pre-post scores border on the medium threshold. Well-being, internalizing behaviors, and externalizing behaviors all yielded medium effect sizes. See Table 4 for calculations of pre-post effect sizes by outcome.

**Table 3**

*Heterogeneity Test for Combined Pre-Post Effect Size on All Studies*

<table>
<thead>
<tr>
<th>Q-value</th>
<th>df (Q)</th>
<th>P-value</th>
<th>$I^2$</th>
<th>$T^2$</th>
<th>Standard Error</th>
<th>Variance</th>
<th>Tau</th>
</tr>
</thead>
<tbody>
<tr>
<td>299.87</td>
<td>40</td>
<td>.000</td>
<td>86.66</td>
<td>0.122</td>
<td>0.038</td>
<td>0.001</td>
<td>0.349</td>
</tr>
</tbody>
</table>

*Figure 2. Pre-Post Effect Sizes by Combined Outcome*
<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>n</th>
<th>Treatment</th>
<th>Instrument</th>
<th>Outcome Measure (g) [Lower, Upper]</th>
<th>95% CI</th>
<th>Outcome Measure (g) [Lower, Upper]</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ager et al. (Child)</td>
<td>2011</td>
<td>105</td>
<td>PSSA</td>
<td>EI</td>
<td>Stress - - - -</td>
<td>1.10*</td>
<td>Depression - - - -</td>
<td>.86,1.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Depression - - - -</td>
<td>1.08*</td>
<td>Anxiety - - - -</td>
<td>.81,1.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Well-being - - - -</td>
<td>.72**</td>
<td>Internalizing - - -</td>
<td>.50,94</td>
</tr>
<tr>
<td>Ager et al. (Parent)</td>
<td>2011</td>
<td>83</td>
<td>PSSA</td>
<td>EI</td>
<td>Stress - - - -</td>
<td>1.08*</td>
<td>Depression - - - -</td>
<td>.81,1.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anxiety - - - -</td>
<td>.72**</td>
<td>Well-being - - - -</td>
<td>.50,94</td>
</tr>
<tr>
<td>Ager et al. (Teacher)</td>
<td>2011</td>
<td>98</td>
<td>PSSA</td>
<td>EI</td>
<td>Stress - - - -</td>
<td>.72**</td>
<td>Depression - - - -</td>
<td>.50,94</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anxiety - - - -</td>
<td>.72**</td>
<td>Well-being - - - -</td>
<td>.50,94</td>
</tr>
<tr>
<td>Baker et al.</td>
<td>2007</td>
<td>31</td>
<td>Music</td>
<td>BASC</td>
<td>Stress - - - -</td>
<td>.68</td>
<td>Depression - - - -</td>
<td>.06,1.49</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anxiety - - - -</td>
<td>.78</td>
<td>Well-being - - - -</td>
<td>.06,1.49</td>
</tr>
<tr>
<td>Bolton et al.</td>
<td>2007</td>
<td>106</td>
<td>Creative play</td>
<td>APAI</td>
<td>Stress - .05 [-.14,.24]</td>
<td>-.05</td>
<td>Depression - - - -</td>
<td>-.01, .17</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anxiety - - - -</td>
<td>-.05</td>
<td>Well-being - - - -</td>
<td>.00, .10</td>
</tr>
<tr>
<td>Kalantari et al.</td>
<td>2012</td>
<td>29</td>
<td>Writing for Recovery</td>
<td>TGIC</td>
<td>Stress - - - -</td>
<td>.27*</td>
<td>Depression - .91 [-49,1.34]</td>
<td>.27,1.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Anxiety - - - -</td>
<td>.91**</td>
<td>Well-being - - - -</td>
<td>.49,1.34</td>
</tr>
<tr>
<td>Lange-Nielsen et al.</td>
<td>2012</td>
<td>66</td>
<td>Writing for Recovery</td>
<td>DSRS</td>
<td>Stress .27* [.03, .52]</td>
<td>.27*</td>
<td>Depression - .58 [-32, .84]</td>
<td>.27, .84</td>
</tr>
<tr>
<td></td>
<td></td>
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Combined pre-post ES (g =) per outcome measure:

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<th>Intervention</th>
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<th>Effect Size (g)</th>
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Combined pre-post ES (g =) for all studies on all outcomes:

.58**

Notes: *p < .05; **p < .001

Studies are duplicated when investigating same outcome with independent reporters (e.g. parents and teachers).
The overall analysis suggested considerable heterogeneity (see Table 3) among the pre-post effect sizes for all outcomes ($I^2 = 86.6\%, Q = 299.87, df = 40, p < .001$). Based on this heterogeneity test, the combined effect size cannot be interpreted meaningfully due to substantial variance among the included studies as indicated by the $I^2$ score (Borenstein et al., 2010). A separate heterogeneity test was performed with the pre-post scores of studies that tested stress outcome as an outcome ($n = 6$), as this outcome yielded a high effect size. Similarly, considerable heterogeneity was found among these six studies ($I^2 = 89.83\%, Q = 49.18, df = 5, p < .001$), suggesting the effect size cannot be interpreted meaningfully.

![Figure 3. Pre-Post Effect Sizes by Independent Outcome](image-url)
**Between-Group Results**

Between-group analyses were also performed among studies (n = 14) that compared the effect of expressive therapies with either a control group or another type of treatment. As discussed in the descriptive statistics section, two of the studies compared the expressive therapy group with another modality of treatment, including Group Interpersonal Psychotherapy (Bolton et al., 2007) and Trauma-Focused Cognitive Behavioral Therapy (Schottelkorb et al., 2012), and two studies compared the effect with a varied type of control, including a reading mentoring program (Ojiambo et al., 2014) and tutorship group (Rousseau et al., 2014). The remaining studies (n = 10) only compared the effect with a waitlist control group. The combined random effects analysis of between-group scores yielded an effect size of 0.32, 95% CI [0.19, 0.46], \( p < .001 \), when all outcomes calculated as independent scores across all 14 studies (see Figure 4). When outcome scores were combined for each study to produce a single mean score, the

![Figure 4. Between-Group Effect Sizes by Combined Outcome](image-url)
Table 5

*Between-Group Effect Sizes (g) by Outcome*

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<th>n</th>
<th>Treatment</th>
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<td>vs. TF-CBT</td>
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<td>[-.67, .83]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shen</td>
<td>2002</td>
<td>30</td>
<td>Play</td>
<td>vs. control</td>
<td>.52</td>
<td>[-.19, 1.23]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tol et al.</td>
<td>2008</td>
<td>403</td>
<td>Play/Expressive</td>
<td>vs. control</td>
<td>-.38*</td>
<td>[-.57, -.19]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zhu et al.</td>
<td>2014</td>
<td>210</td>
<td>Calligraphy</td>
<td>vs. control</td>
<td>1.06**</td>
<td>[.64, 1.49]</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Combined between-group ES (g =) per outcome measure (n = number of observe outcomes in analysis):

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Stage</th>
<th>Intervention</th>
<th>Control</th>
<th>Effect Size</th>
<th>95% CI</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.43*</td>
<td>[.02, .84]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.17</td>
<td>[-.31, .66]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.18*</td>
<td>[.03, .32]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.27*</td>
<td>[.01, .53]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.56**</td>
<td>[.23, .88]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.47*</td>
<td>[.15, .78]</td>
<td></td>
</tr>
</tbody>
</table>

Combined between-group ES (g =) for all studies on all outcomes:

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Stage</th>
<th>Intervention</th>
<th>Control</th>
<th>Effect Size</th>
<th>95% CI</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.32**</td>
<td>[.19, .46]</td>
<td></td>
</tr>
</tbody>
</table>

Combined between group ES (g =) for comparison with other treatment:

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Stage</th>
<th>Intervention</th>
<th>Control</th>
<th>Effect Size</th>
<th>95% CI</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.26</td>
<td>[-.14, .65]</td>
<td></td>
</tr>
</tbody>
</table>

Combined between group ES (g =) for comparison with control only:

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Stage</th>
<th>Intervention</th>
<th>Control</th>
<th>Effect Size</th>
<th>95% CI</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.35**</td>
<td>[.23, .48]</td>
<td></td>
</tr>
</tbody>
</table>

Notes. *p < .05; **p < .001

Studies are duplicated when investigating same outcome with independent reporters (e.g. parents and teachers).
combined effect size is slightly lower at 0.32, 95% CI [0.09, 0.55], \( p < .006 \) (See Figure 6). Both these combined effect sizes are medium.

A separate combined analysis was performed on the studies that conducted between-group comparisons only with a control group. The combined effect size for these studies (\( n = 10 \)) was 0.35, 95% CI [0.23, 0.48], \( p < .001 \). Additionally, an analysis of the four studies that compared the effect of expressive therapies with another type of treatment was performed, yielding an effect size of 0.26, 95% CI [-0.14, 0.65], \( p < .209 \). These analyses revealed a medium and borderline small effect size respectively. The overall analysis suggested considerable heterogeneity (see Table 6) among the between group effect sizes for all outcomes (\( I^2 = 86.2\%, Q = 238.97, df = 33, p < .001 \)). Based on this heterogeneity test, the combined effect size cannot be interpreted meaningfully due to substantial variance among the included studies as indicated by the \( I^2 \) score (Borenstein et al., 2010).

### Table 6

<table>
<thead>
<tr>
<th>Q-value</th>
<th>df (Q)</th>
<th>P-value</th>
<th>( I^2 )</th>
<th>( T^2 )</th>
<th>Standard Error</th>
<th>Variance</th>
<th>Tau</th>
</tr>
</thead>
<tbody>
<tr>
<td>238.97</td>
<td>33</td>
<td>.000</td>
<td>86.191</td>
<td>0.121</td>
<td>0.043</td>
<td>0.002</td>
<td>0.348</td>
</tr>
</tbody>
</table>

#### By Treatment Results

Analyses were also performed selecting treatment type as a moderator and calculating the pre-post effect size. Art therapy (\( n = 4 \)) yielded an effect size of 0.81, 95% CI [0.40, 1.22], \( p < .001 \); play therapy (\( n = 5 \)) resulted in an effect size of 0.32, 95% CI [.19,.44], \( p < .001 \); writing therapy (\( n = 3 \)) yielded an effect size of 0.59, 95% CI [0.23, .95], \( p < .001 \); and integrative therapy (\( n = 2 \)) resulted in an effect size of .61, 95% CI [-0.08, 1.29], \( p = .082 \). Sandplay, theatre, and music were also calculated (see Table 7), even though they each are isolated studies.
Similar to the other meta-analytical calculations, considerable heterogeneity was found when grouping according to treatment type ($I^2 = 79.31\%$, $Q = 77.36$, $df = 16$, $p < .001$). Therefore, the combined effect size by treatment type cannot be interpreted meaningfully due to substantial variance among the included studies as indicated by the $I^2$ score. Considerable heterogeneity was also found with testing within each treatment group.

Table 7

Combined Pre-Post ES (g) by Treatment Type

<table>
<thead>
<tr>
<th>Treatment</th>
<th>n (number of studies)</th>
<th>Studies Included</th>
<th>Combined ES (g) for All Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>4</td>
<td>Moosa (2017); Quinlan (2016); Rowe (2017); Ugurlu (2016)</td>
<td>.81** [−.40, 1.22]</td>
</tr>
<tr>
<td>Music</td>
<td>1</td>
<td>Baker (2007)</td>
<td>.73* [−.02, 1.44]</td>
</tr>
<tr>
<td>Play</td>
<td>5</td>
<td>Bolton (2007); Ojiambo (2014); Schottelkorb (2012); Shen (2002); Tol (2008)</td>
<td>.43** [−.09, .76]</td>
</tr>
<tr>
<td>Writing</td>
<td>3</td>
<td>Kalantari (2012); Lange-Nielson (2012); Zhu (2014)</td>
<td>.59** [−.23, .95]</td>
</tr>
<tr>
<td>Sandplay</td>
<td>1</td>
<td>Rousseau (2009)</td>
<td>.25 [−.02, .53]</td>
</tr>
<tr>
<td>Theatre</td>
<td>1</td>
<td>Rousseau (2014)</td>
<td>.36** [−.20, .52]</td>
</tr>
<tr>
<td>Integrative expressive therapies</td>
<td>2</td>
<td>Ager (2011)</td>
<td>.61 [−.08, 1.29]</td>
</tr>
</tbody>
</table>

Total Number of Studies 17

Overall Combined Effect Size .42** [−.31, .54]

Notes. *$p < .05$; **$p < .001$

^Mean of all outcomes calculated when studies investigated multiple types of outcomes.
### Table 1: Pre-Post Effect Sizes by Treatment Type

<table>
<thead>
<tr>
<th>Group by Treatment Type</th>
<th>Study name</th>
<th>Outcome</th>
<th>Statistics for each study</th>
<th>Hedges's g and 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hedges's g</td>
<td>Lower limit</td>
</tr>
<tr>
<td>Art</td>
<td></td>
<td></td>
<td>0.81</td>
<td>0.40</td>
</tr>
<tr>
<td>Integrative</td>
<td></td>
<td></td>
<td>0.61</td>
<td>-0.08</td>
</tr>
<tr>
<td>Music</td>
<td></td>
<td></td>
<td>0.73</td>
<td>0.02</td>
</tr>
<tr>
<td>Play</td>
<td></td>
<td></td>
<td>0.43</td>
<td>0.09</td>
</tr>
<tr>
<td>Sandplay</td>
<td></td>
<td></td>
<td>0.25</td>
<td>-0.02</td>
</tr>
<tr>
<td>Theatre</td>
<td></td>
<td></td>
<td>0.36</td>
<td>0.20</td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
<td>0.59</td>
<td>0.23</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td>0.42</td>
<td>0.31</td>
</tr>
</tbody>
</table>

*Figure 5. Pre-Post Effect Sizes by Treatment Type*
CHAPTER FIVE: CONCLUSIONS

Overview

In light of the current global crisis, results from this meta-analysis seek to contribute to the knowledge base pertaining to effective treatment approaches with refugee children and adolescents who have been exposed to pre-migration and/or post-migration trauma. The purpose of this section is to respond to this study’s research question that inquired if expressive therapies are effective in treating trauma-related symptoms in refugee children and adolescents impacted by forced migration. Yielded effect sizes, resulting from this meta-analyses, will be discussed. Issues related to heterogeneity will also be discussed in understanding these meta-analytical results. Then, implications to these findings will be presented as a means to respond to this study’s conclusions. Limitations to this study’s research design and methods are also important to consider in a scientific and practical response to its findings. Finally, recommendations for future research will be articulated in an effort to direct further investigation related to this topic.

Discussion

The purpose of this study was to investigate the effect of expressive therapies in treating children and adolescents impacted by refugee trauma. Seventeen studies were included based on the previously established inclusion criteria. Collectively, these studies investigated seven different approaches to expressive therapies (art, play, sandplay, music, theatre, writing, and integrative), representing diverse and eclectic theoretical methods in treating refugee trauma. All studies, however, shared a common denominator in using expression as a means to bridge the emotional gap between resiliency and past traumatic experiences. This commonality has been found to be an important contributor to effectively treat trauma symptoms in children and adolescents (Ehlers & Clark, 2000). The calculated pre-post effect sizes among the individual
studies included in this meta-analysis support this hypothesis. When measuring the effect on stress, four studies yielded a very high effect in reducing symptoms, including the art (Moosa et al., 2017; Ugurlu et al., 2016), play (Tol et al., 2008), and writing (Zhu et al., 2014) modalities. Stress also emerged as the most impacted coded outcome when analyzing the combined effect size among all studies that measured this symptom (g = 0.95). This finding suggests that expressive therapies may effectively treat stress symptoms when considering pre-post scores among children and adolescents who received art therapy, play therapy, or writing therapy interventions.

Pre-post comparisons also revealed that certain expressive therapies may effectively treat depression. Although the combined effect size for all studies (g = 0.45) was lower compared to the stress outcome (g = 0.95), four studies emerged with a high effect size, including writing (Kalantari et al., 2012; Lange-Nielsen et al., 2012) and art (Moosa et al., 2017; Ugurlu et al., 2016) modalities. Art therapy emerged as the most effective expressive therapy when comparing all individual effect sizes among all studies (Moosa et al., 2017; Rowe et al., 2017; Ugurlu et al., 2016) when treating anxiety symptoms. This finding is consistent with the calculated data when controlling for treatment type among all combined pre-post effect sizes (see Table 7). In other words, art therapy may be the most effective expressive modality when treating refugee trauma among children and adolescents, especially in treating anxiety symptoms.

Among the included studies, the well-being outcome was established as a more generic means to measure trauma symptoms. Six studies measured this outcome, covering five different types of expressive modalities, including art (Quinlan et al, 2016), sandplay (Rousseau et al., 2009), theatre (Rousseau, 2014), play (Tol et al., 2008), and integrative therapies (Ager et al., 2011; Rousseau et al., 2005). Among these studies, individual analyses highlight the
Psychosocial Structured Activities (PSSA) intervention in Ager et al.’s (2011) study and the Creative Arts Therapy program in Quinlan et al.’s (2016) study as yielding high effect sizes. It is noteworthy that the integrative approach of the PSSA is a classroom-based program that “incorporates play therapy, drama, art and movement in an effort to enhance children’s resilience and feelings and security after trauma” (Ager et al., 2011, p. 1125). This study’s high effect sizes, as measured by child (g = 1.10), parent (g = 1.08), and teacher (g = 0.72) instruments, may demonstrate the effectiveness of structured and integrative expressive modalities in improving an overall sense of well-being. It should also be noted, however, that this study’s use of ethnographic interviewing (EI) may have skewed the reliability and validity of the quantitative data yielded in the results, thereby rendering high effect sizes and causing a false positive conclusion.

Finally, externalizing and internalizing behaviors in the pre-post effect size comparisons showed that music (Baker et al., 2007) and play (Ojiambo et al., 2014) may improve symptoms. Both studies yielded high effect sizes when measuring externalizing and internalizing behaviors; yet, they both involved small sample sizes (n = 31 and n = 30, respectively). Similar to the well-being construct, externalizing and internalizing behaviors may represent more generic outcomes that are subjectively evaluated, especially when reported by parents and teachers. Therefore, it is difficult to draw conclusions on the effect on externalizing and internalizing behaviors based on these effect sizes.

When assessing the individual pre-post effect sizes among all the studies, there appears to be an overall effect in improving symptoms related to refugee trauma, as manifested by stress, depression, anxiety, well-being, and externalizing and internalizing behaviors. This effect seems to be most validated by art therapy’s improvement on stress symptoms. Issues of substantial
heterogeneity as presented in the Results section, however, suggest that the overall combined meta-analytical findings are not meaningful. Therefore, in considering the pre-post effect sizes, individual analyses of effect sizes may serve as more meaningful conclusions as opposed to the combined effect sizes of all studies, either by individual outcome or by pooled outcomes.

This heterogeneity is reflective of the diverse sampling populations, methodology, and measurements among these 17 studies. The purpose in conducting a meta-analysis was to draw upon existing literature and produce a combined effect size that is indicative of the hypothesized commonality found in expressive therapies. Heterogeneity tests, however, suggest that this commonality cannot be shown among these 17 studies. This may be attributed to the diversity of the modalities themselves, or the samples that span across several cultures, extent of trauma, and age ranges. Nevertheless, effect sizes of pre-post individual studies and by treatment type show that art therapy may be an effective type of expressive therapy to treat refugee children and adolescents.

Further discussion considers the results of the between-group effect sizes among the studies that compared the effectiveness of expressive therapies with either a control group or another type of treatment modality. This comparison helps shed light on the pre-post effect sizes. Whereas the pre-post effect sizes quantify changes in outcomes at the baseline and post-intervention measurements, demonstrating the extent in which a treatment modality is either effective or not effective, the between-group compares this effect with either a control group or another treatment. When treating stress symptoms, writing therapy (Zhu et al., 2014) emerged as an effective treatment among victims of the Chinese earthquake as measured by salivary cortisol ($g = 1.06$). Similarly, this treatment yielded a high effect size in the pre-post comparison ($g = 1.30$). Yet the difference between pre-post and between-group effect sizes suggests that some
participants improved in stress symptoms without any treatment. This suggestion provokes an interwoven concept when assessing treatment effectiveness: Why do some of the population improve without treatment and why do some respond to treatment?

Overall, an analysis of individual effect sizes among the between-group comparison studies shows that writing therapy may be the most effective treatment when treating depression and stress. Nevertheless, as with the combined pre-post effect sizes, substantial heterogeneity renders the combined between-group sizes without meaning, due to the variation among studies. Furthermore, the between-group comparisons reveal other issues related to the effectiveness of specific types of therapy modalities. For example, whereas play yielded a low effect size ($g = 0.05$) in the pre-post data in Bolton et al. (2007), it yielded negative effect sizes when compared with the control group ($g = -0.23$) and Group Interpersonal Psychotherapy treatment ($g = -0.83$). Although the effect size when comparing with the control group is not significantly significant ($p = .09$), such findings bring to light the possibility that the control group experiences relief from traumatic symptoms more effectively than the intervention group. This possibility draws from contemporary discussions on the ethics associated with implementing any type of treatment modality. Bonanno and Lilienfeld (2008), for example, suggest that the clinician’s first responsibility is to allow the natural process of healing to occur in victims who are impacted by trauma. This principle, which assumes a natural process of resiliency that could be interrupted by an outside intervention, may be demonstrated in Bolton et al.’s (2008) negative effect size when compared to the control group. Or, at the very least, it proposes that the natural resiliency process may be a key variable in the effectiveness of expressive therapies.

Due to the limited number of quantitative studies aimed at investigating the effectiveness of expressive therapies with a population impacted by forced migration, it is difficult to compare
the findings of this meta-analysis with past work. Past systematic reviews, however, have measured the effect of expressive therapies in treating more general types of child trauma. These reviews have commonly reported the difficulty in drawing conclusions due the poor quality of research in past studies (Eaton et al., 2007). Furthermore, a review conducted by van Westrhenen and Fritz (2014) found that past studies that investigated the effect of creative arts therapy for child trauma [not specific to refugee trauma] were frequently (44.7%) non-empirical and descriptive in nature, with the majority of studies lacking in quality research design and methodology. The authors attribute this finding to the possibility that “many art therapists find themselves working as practitioners in the field and not necessarily in the world of academia, and hence researching their practice and publishing articles is of secondary importance to them” (p. 532). Similarly, this meta-analysis finds that it is difficult to draw conclusions based on the different research methods, sample populations, and measured outcomes.

In summary, this meta-analysis may shed light on the overall benefit of implementing various types of expressive therapies with refugee children and adolescents. Although it is difficult to statistically conclude whether the benefits are due to sampling error, chance, or natural resilience, there seems to be a general improvement in symptoms related to anxiety, stress, depression, well-being, internalizing behaviors, and externalizing behaviors. Implications to these findings are discussed in the next section as a means to apply the results of this meta-analysis to counselors, humanitarian workers, and practitioners working with refugee children and adolescents.

**Implications**

Although one motivation in this meta-analysis was to investigate the stand-alone effectiveness of expressive therapies in treating refugee children and adolescents, this study’s
findings suggest expressive therapies may be most effective when integrated with another type of trauma-focused modality. Importantly, some studies included in this meta-analysis incorporated some other type of therapeutic modality in the implementation of the tested expressive therapy. Moosa et al. (2017), for example, considered the integration of solution-focused therapy with art as a means to treat refugee trauma. Furthermore, two studies conducted comparisons with other types of trauma-informed therapies (Interpersonal Group Psychotherapy and TF-CBT). The pre-post comparisons in these studies showed that expressive therapies were less effective compared to the measured trauma-informed treatments. Therefore, these findings suggest that expressive therapies should perhaps be implemented when integrated with other approaches. Trauma-focused interventions should consider modalities that incorporate some type of expressive therapeutic practice as a means to reduce symptoms and enhance the treatment process (Cohen et al., 2017). Such integration demonstrates the need to assimilate various and diverse approaches. Trauma-informed modalities, therefore, must draw from a theoretical understanding of what happens to the victims’ brains and must respond to empirical findings to how to best treat them.

In this study, art therapy was found to be the most effective modality of expressive therapy, especially when measuring stress symptoms. These results are consistent with emerging international research that demonstrates art as an effective treatment strategy in reducing stress among traumatized children (van Westrhenen, Fritz, Vermeer, Boelen, & Kleber, 2019). These findings present important implications for practitioners working with refugee children and adolescents. As stress frequently emerges as a common response to refugee trauma (Silove et al., 2017), it is important to consider intervention practices that address stress symptoms. Art therapy should be considered as an effective means to reduce stress in refugee victims as it
addresses issues related to post-trauma neurology. Art therapy should also be considered due to its practicality that enables it to be easily integrated into other types of trauma-informed practices and its flexibility to be implemented in a variety of settings and contexts.

When treating children impacted by all types of trauma, Hobfoll et al. (2007) propose five elements that every treatment strategy should integrate. Therapeutic responses should help the victim 1) develop a sense of safety, 2) provide a calming atmosphere, 3) foster self-efficacy and collective-efficacy, 4) create connectedness, and 5) provide hope. All trauma-informed treatment modalities, therefore, should consider these five principles. The implementation of these five principles is further emphasized by the theoretical frameworks presented in this study; all five represent some aspect of the neurobiological and human ecosystemic theories. Expressive therapies may, therefore, increase the efficacy of these five principles, particularly when integrated with other trauma-focused approaches (Cohen et al., 2017), such as TF-CBT or KidNet.

In response to the results of this study, art therapy’s role in addressing Hobfoll et al.’s (2007) five elements is also worthy of consideration when discussing the practical implications. Importantly, art therapy modalities may effectively address these elements (Baráth, 2003), with special emphasis on developing a sense of safety, providing a calming atmosphere, and fostering self-efficacy. First, art therapy may provide a sense of safety as the child or adolescent is able to engage in a safe and protected environment. Second, art therapy may provide the necessary calming atmosphere free from chaos, external stressors, and noise. For this reason, the soothing effect of art therapy has been hypothesized to be the primary agent that address stress symptomology (Malchiodi, 2015). This soothing effect may be contrasted with other types of expressive therapies which may not provide the needed calming atmosphere when treating
trauma. Other modalities such as play and drama may potentially provide a chaotic atmosphere, thereby interfering with the environment needed to heal from trauma. Although the potential benefits of other noisy and active forms of expressive therapies should still be considered, it is important to consider the soothing effect of art therapy which may address neurological implications. Third, the child’s ability to manipulate colors, brushes, and art objects may foster self-efficacy and agency as the child is given an opportunity to express thoughts through imagery. This artistic manipulation addresses trauma-related neurology as it pertains to both kinetic movement and the development of self-efficacy (Appleton, 2001; Kalmanowitz, 2015).

Another motivation in this meta-analysis was to test the effect of expressive therapies as an alternative to other trauma-informed approaches that require licensed or trained clinicians. This motivation was fueled by the lack of resources and personnel available to humanitarian organizations and government agencies currently responding to the global crisis. A review of the studies included in this meta-analysis, however, showed that most of the implemented expressive modalities either required some type of training. For example, both music therapy music (Baker & Jones, 2005) and calligraphy training (Zhu et al., 2014) assume specific training necessary to implement the intervention. Although several studies implemented an expressive intervention that did not require a licensed clinician, training to some level was still required. The PSSA, for example, requires school teachers to be trained to implement the intervention program in the classroom setting (Ager et al., 2011). Arguably, certain expressive therapies require less intensive training and licensure compared to other evidence-based treatments; however, it should not be supposed that training or skills are unnecessary in implementing expressive therapies as either an alternative or a complement to other trauma-informed modalities. Nevertheless, art activities can easily be introduced, apart from a formal and structured approach to art therapy, in
all intervention programs as a way to practically respond to Hobfoll et al.’s (2007) elements of resiliency.

**Limitations**

The strength of meta-analytical findings depends upon the quality of studies included in the analysis (Wampold et al., 2000). An immediate limitation to this study’s findings, therefore, pertains to the validity and reliability of the studies’ designs and results included in this meta-analysis. As previously discussed in the Methods section, a common problem in conducting a meta-analysis is publication bias among the studies included in the study (Reinhold, Burkner, & Holling, 2017). This publication bias can potentially skew the true effect size related to the research question. These meta-analytical findings, therefore, depend upon the research design and bias control of all the pooled studies. This characteristic presents a noteworthy limitation when considering this study’s results.

Furthermore, conducting any meta-analysis presents the risk of excluding relevant past research that meets the inclusion criteria and should, therefore, be included in the pooled data. Although careful search procedures that involved several academic and scholarly databases were implemented in this meta-analysis, it should be noted that these meta-analytical findings may not represent the full picture. This limitation impacts the extent in which these findings are evaluated; researchers should acknowledge that disregarded studies may potentially change the effect sizes, thereby answering the research question with different findings.

Furthermore, several outcomes were coded in conducting this meta-analysis for the purpose of identifying measurable results. Although most coded outcomes matched verbatim to the authors’ operational definitions, this author also interpreted some outcomes to best fit into the identified codes. For example, grief was coded as depression in the study by Kalantari et al.
(2012) and hope was coded as a construct of well-being in the study by Tol et al. (2008). This coding process poses a potential limitation in correctly identifying outcome effect sizes. Although such coding does not seem to skew the yielded effect sizes, it should be noted that this limitation emphasizes the overall challenge in identifying specific measurable outcomes related to refugee trauma. That is, among the 17 included studies in this meta-analysis, six outcomes were identified and coded. Yet, many other constructs of refugee trauma could be identified as a means to better understand trauma-related outcomes and the therapeutic modalities that improve symptoms.

Finally, issues of heterogeneity were addressed by implementing a random effects model. In addressing these issues, heterogeneity tests exposed limitations pertaining to substantial differences among the studies that cannot be explained by sampling error. In concluding overall effect sizes, issues of heterogeneity emerged as the most significant limitation to this study’s results. Although medium and high effect sizes were found among some of the analyses, it is difficult to conclude meaningfulness due to substantial heterogeneity. Although these issues of heterogeneity bring to question the validity of the effect sizes that were yielded in this study, they help direct future research in further investigating the effect of expressive therapies on refugee children and adolescents.

**Recommendations for Future Research**

This study was motivated by the need to investigate the effect of therapeutic modalities in treating trauma-related symptoms among refugee children and adolescents. Recommendations for future research, therefore, are motivated by similar needs to increase the knowledge base in helping this impacted population. Due to cultural and language issues, future research should more thoroughly investigate the suitability and appropriateness of explicit modalities as they
pertain to specific populations. As presented in this study, issues of heterogeneity speak of the substantial differences among the included studies. Further research, therefore, should not only address methodological differences, but issues pertaining to the sample population’s culture, language, stage of migration, and age should be addressed. The interaction of these issues can then be further investigated as they interact with treatment types. For example, further research that considers art therapy’s integration with KidNet within a narrower age range and within a specific refugee population may render findings that present more significant implications. These findings would be further strengthened if conducted within a specific setting and stage of migration. Future research should also consider the question of effectiveness among several cultures. Yet, this author suggests that cultural implications should be considered when choosing the appropriate modality, and therefore further research that investigates this appropriateness should be pursued.

Furthermore, this study highlighted the effectiveness of expressive therapies when integrated with other types of trauma-focused approaches. This discussion is based upon theoretical principles related the neurobiological framework that suggests expressive therapies may address some initial bottom-up symptoms caused by trauma. Further research, therefore, should thoroughly investigate the effect of this integration. Between-group comparisons, for example, could evaluate the effect of sandplay therapies in preparing children and refugees for TF-CBT, thereby rendering TF-CBT more effective. Such an approach would draw from diverse modalities in addressing both the neurobiological and human ecosystemic frameworks.

Additionally, this study brings to light resiliency factors that shape recovery and minimize traumatic symptoms. The interaction between natural resiliency tendencies and therapeutic modalities should be explored. Drawing from the neurobiological and human
ecosystemic frameworks, research that investigates how expressive therapies potentially activate natural resiliency working models are worthy of consideration. This implication for future research is drawn from research that brings to question the neurobiology of resiliency (Masten, 2014) while questioning the role of therapeutic responses in fostering this resiliency (Bonanno & Lilienfeld, 2008).

As the knowledge base related to this topic increases, additional quantitative studies that yield reliable and valid data can be pooled to create a more homogeneous meta-analysis. Future meta-analyses can narrow the inclusion criteria, thereby asking a more specific research question related to the effect of expressive therapies on this population. For example, more quality studies that investigate the effect of art therapy on pre-adolescent children within 6 months of forced migration would create a more focused research question. Further research that considers a narrower scope of populations and modalities would strengthen implications for practice as clinicians and humanitarian workers seek to best help refugee children and adolescents. Yet, the need for further qualitative studies should also be emphasized. Case studies, ethnographic analyses, and investigative interviews will contribute substantially to better understanding this type of trauma, and how to best treat it with evidence-based practices.
November 2, 2018

Brian K Cambra
IRB Application 3566: The Effect of Expressive Therapies on Refugee Children and Adolescents: Meta-Analytic Findings

Dear Brian K Cambra,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because it will not involve the collection of identifiable, private information.

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application’s status, please email us at irb@liberty.edu.

Sincerely,

[Redacted]

Administrative Chair of Institutional Research
The Graduate School

Liberty University | Training Champions for Christ since 1971
References


Malchiodi & D. A. Crenshaw (Eds.), *Creative arts and play therapy for attachment problems* (pp. 178–194). New York: Guilford Press.


