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EVALUATION OF THE DYAD BONDING DANCE MODEL FOR MOTHERS AND
INFANTS EXPOSED TO STRESSFUL LIFE SITUATIONS

A DISSERTATION
(submitted by)

HADAS WEISSBERG

In partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

LESLEY UNIVERSITY



Lesley University
Graduate School of Arts & Social Sciences
Ph.D. in Expressive Therapies Program

DISSERTATION APPROVAL FORM

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EXPOSED TO STRESSFUL LIFE SITUATIONS

Approvals

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Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copy of the dissertation to the Graduate School of Arts and Social Sciences.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

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I hereby accept the recommendation of the Dissertation Committee and its Chairperson.

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STATEMENT BY AUTHOR

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SIGNED: _____

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ABSTRACT

This study examines the Dyad Bonding Dance (DBD), a dance movement group therapy model developed to improve nonverbal communication between mothers exposed to stressful life situations and their children. The research emphasizes the importance of mother-child attachment relationships and transmission of stress from parents to children via nonverbal communication, which may affect bonding and child health. This qualitative study assessed the experience of dance movement therapists using this novel model. Broad research questions addressed were: (1) What are dance therapists' experiences with the DBD model, focusing on its impact or lack of impact in improving the dyadic relationship between mother and child and reducing their stress levels? (2) Which aspects of this model work well and which should be changed or improved?

Four dance movement therapists participated in this study (three in group therapy and one in individual therapy). All attended a DBD training seminar and then each independently led an eight-session intervention using the DBD model. Participants completed questionnaires after the first and last sessions regarding the appropriateness of the mothers' nonverbal behavior with their children and discussed the model in semistructured interviews. This study incorporated a constructive approach to analyze the data.

Four emergent themes emerged: Structure; Influence on the mothers, children, and their relationships; Therapist's role; and Value of the DBD model in group therapy. Participant responses suggest all the structure was effective overall. It positively influenced the mothers and children individually, as well their relationships, developing

mutuality and intimacy, better bonding, happiness in the relationship, and quality time. Participants saw value in the therapist roles, such as observer, mirror, and empathic reflection, during the model. They also noted the DBD model encouraged mothers to create better nonverbal communication with their children. Further, the participants who led the DBD model as a group therapy mentioned its value in providing mothers a way to be with other mothers in situations similar to their own.

CHAPTER 1

Introduction

This study examines the Dyad Bonding Dance (DBD), a group therapy model using dance movement therapy (DMT) methods, developed to improve nonverbal communication between mothers exposed to stressful life situations and their toddlers. This model grew from my experience as a dance therapist working in dyad settings with stressed and traumatized mothers and children in individual and group therapy. The research examines specifically the experience of therapists trained in this model who led eight-session DBD group therapies.

The DBD model was initially developed to focus on mothers who experienced traumatic life events, based on the notion that traumatic events can lead to a myriad of psychological disturbances such as posttraumatic stress disorder (PTSD), dissociation, somatization, and affect dysregulation (van der Kolk, Pelcovitz, Roth, & Mandel, 1996; van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005), which can affect how mothers interact with their children. However, due to the complexity of developing a new intervention with a sensitive population, this study shifted focus instead to mothers with stressful life situations rather than those exposed to traumatic events.

I am a mother of two, born and raised in Israel—where trauma, the Holocaust, and stress are part of the culture. When I became a mother, I started to lead group therapy with Israeli mothers who had immigrated to the United States and, in parallel, began my doctoral studies. By the time my second child was born, I was “playing” with songs and movement games with him for fun. However, noticing how the “play” affected our personal mother-child communication and created better bonding, I

combined the familiar DMT methods and models from the group therapy I was leading with those in the literature—and then developed the DBD model.

The pilot study for this research used qualitative methods to address therapists' perceptions of nonverbal behaviors of children and their traumatized mothers, and what they believed the behaviors indicated in regards to trauma transmission between parent and child (Weissberg, 2013). The study included individual interviews with four dance therapists who worked with dyadic sets of traumatized mothers and their children.

Traumatized mothers, for the purpose of the pilot study, included mothers who experienced any traumatic event as a parent, post- or pre-partum. Examples of trauma-inducing events included domestic violence, terrorism, war, and natural disasters.

Results from the pilot study showed that these therapists believed trauma may lead to two extreme intensity levels in the mothers' bodies: (1) high intensity, which manifests as anxiety, abruptness, boundness, and fast movement; and (2) low intensity, which manifests as depression, slow and gradual movement, and low and neutral flow. Similarly, previous researchers claimed a connection between parental distress and low movement intensity. Specifically, Birklein and Sossin (2006) found that highly stressed parents presented more neutral abruptness and neutral flow adjustment. *Neutral flow* refers to absence of muscle elasticity and tension. In addition, Shahar-Levi (1994) concluded that trauma could lead to passivity in movement.

Participants noted other common nonverbal behaviors among traumatized mothers in the pilot study, including shallow breathing, breath holding, low frequency of eye contact with the child, too much or too little holding or physical touch with the child, extremely wide or narrow space between mother and child, and the sense of the mothers

being closed in the body. Participants described not only the mothers' lack of holding the children, but also too much holding, not giving the child space to explore, and creating distance from the child. Theorists and researchers have emphasized the importance of space and holding between parent and child (Bion, 1963; Krueger, 1989; Shai & Belskey, 2011; D. W. Winnicott, 1958, 1971). For example, D. W. Winnicott (1971) wrote about a physical and hypothetical space between the mother and her infant that lies between reality and imagination—the infants' internal and external perception.

D. W. Winnicott (1958) recognized the importance of the mother's holding, both bodily and metaphorically. Bion's (1963) theory similarly described the mother's hands supporting the baby's body in symbolic and material ways. Krueger (1989) acknowledged the importance of touch and of how touch facilitates separation of the body from the outside world. Shai and Belskey (2011) noted the importance of the quality of movement, space, and touch towards infants in their research. Unfortunately, there is a lack of studies related to other nonverbal patterns, such as eye contact or breathing, between mother and infant.

Pilot study participants also mentioned the lack of attunement between traumatized mothers and their children, and that the mothers' trauma responses might have led the children to attune themselves to their mothers instead of the mothers attuning to their children. This parallels Crnic, Ragozon, Greenberg, Robinson, and Basham's (1983) study, which found highly stressed mothers less able to identify their infants' cues and less attuned to the cues they did identify. Similarly, Laor, Wolmer, and Cohen (2001) concluded that parental trauma reduced mentalization and reflectivity in the parent. In addition, Birklein and Sossin (2006) found that when parents were more

stressed, their attunement to their children decreased, thus making the child-parent attachment insecure.

In the pilot study, the participant therapists noted that the children of traumatized mothers exhibited a wide range of behaviors. The behaviors included unanswered attempts to come closer to the mother, hypervigilance, and aggressive behavior. Although participants also mentioned overly independent behavior, this contradicted findings from Rowland-Klein and Dunlop's (1998) research. Those researchers found trauma survivors' offspring had difficulty in the individuation process and were therefore *less* independent. Last and Klein (1984) also found that survivors' offspring tended to describe themselves as more dependent.

The children's aggressive behaviors that the pilot participants mentioned agreed with Gangi, Talamo, and Ferracuti's (2009) findings. Their study included a control group and a group of 40 nonimmigrant Italian Jews who were offspring of Holocaust survivors. Gangi et al. found higher levels of aggression in the trauma offspring group compared with the control group. On the other hand, Bachar, Cale, Eisenberg, and Dasberg (1994) found no significant differences between a group of grandchildren of Holocaust survivors and a control group relative to the way they expressed aggression.

Pilot study participants described nonverbal patterns such as neutral flow, frozen body, and shallow breathing in children of traumatized mothers. Similarly, Birklein and Sossin (2006) found children showed decreased high-intensity movement and increased free-flow movement relative to stressed parents. Unfortunately, other than Birklein and Sossin's research, little research has addressed movement behavior in children of traumatized mothers.

In the pilot study, participants spoke about similarities in body posture and movement between traumatized mothers and their children. In addition, participants believed traumatized mothers transmitted nonverbal behaviors and movement to their children. Related to this finding was Birklein and Sossin's (2006) quantitative study conducted to confirm their hypothesis that mothers transmitted nonverbal stress to their children. Their study included 26 parent-child dyads ($N = 52$) in which all parents had experienced subclinical stress. The researchers first administered three standardized self-reporting stress scales to measure the parents' stress levels, and then filmed three 15-minute parent-child dyad sessions. They found three clusters of movement patterns described and used in the Kestenberg Movement Profile (KMP). In addition, their results showed that highly stressed parents presented more neutral abruptness and neutral flow adjustment. Furthermore, discord between stressed parents and their children and a marked decrease in stressed parents' attunement to their children were evident. (See Literature Review for further details.)

The pilot study results suggested trauma and stress might affect the attachment relationship between mothers and their children in a range of ways noticeable to dance movement therapists. However, the pilot study did not address ways dance movement therapists assist traumatized and stressed mothers, reduce trauma and stress transmission, or support mothers to create better attachment relationships with their children. Thus, the pilot led to this dissertation study, examining a DMT model to address those issues.

Transmission of stress from parents to children via nonverbal communication might influence the attachment relationship (Sossin & Birklein, 2006). Such parental trauma has the potential to disrupt a parent's ability to attune to his or her child, which

can negatively affect the child (Beebe, 2011; Crnic, Ragozon, Greenberg, Robinson, & Basham, 1983; Fonagy, Gergely, Jurist, & Target, 2002; Laor, Wolmer, & Cohen, 2001).

Dance therapists have a long history of working with infants, children, and their parents. Previous DMT approaches include the works of Beebe et al. (2012), Kestenberg and Robbins (1975), and Tortora (2006; 2010). I developed the DBD model based on these approaches with the goals of reducing transmission of stress between mother and child (Sossin & Birklein, 2006) and of teaching parents nonverbal ways to bond and attune better to their children. The DBD model also functions as a group therapy based on the premise that mothers benefit from the support of and sharing feelings with other mothers in similar situations (Van Puyvelde et al., 2014).

The purpose of this study was to investigate the feasibility of introducing new body-based interventions while using DMT methods to address the issues of mothers' stress, attunement, and nonverbal communication skills. Specifically, the research questions were:

- 1 . What are dance therapists' experiences with the DBD model, specifically focusing on its impact or lack of impact in improving the dyadic relationship between mother and child and reducing their stress levels?
- 2 . Which aspects of the model work well and which should be changed or improved?

CHAPTER 2

Literature Review

The notion that traumatic events can lead to myriad psychological disturbances is not new. Researchers repeatedly found debilitating PTSD, dissociation, somatization, and affect dysregulation among the effects of trauma (e.g., van der Kolk, 1996, van der Kolk et al., 2005). Less studied, however, was the transmission of trauma from parents to children (Barocas & Barocas, 1973).

Although the literature did not well define the term *intergenerational trauma transmission*, the subject most broadly studies how a grandparent's or parent's traumatic experience shapes their offspring (Barocas & Barocas, 1973; Yehuda, Schmeidler, Giller, Siever, & Binder-Brynes, 1998). For example, intergenerational transmission was found among children of veteran fathers (Davidson & Mellor, 2001) and of mothers (and sometimes fathers) affected by terrorism (Coates, Schechter, & First, 2003; Laor et al., 2001; Larrieu & Bellow, 2004). Birklein and Sossin (2006) and Sossin and Birklein (2006) focused their explanations on stress. Specifically, when parents are more stressed, the parents' attunement to their children decreases, and thus the child-parent attachment becomes insecure.

The literature emphasized both the influence of stress in general and of trauma in particular on the parent-child relationship (Beebe, 2011; Sossin & Birklein, 2006). For example, studies showed parental trauma characterized by disorganized attachment and reduced mentalization and reflectivity in the parent (Beebe, 2011; Crnic et al., 1983; Fonagy et al., 2002; Laor et al., 2001).

Researchers claimed that some victims often unconsciously remember and store trauma in the body (Shahar-Levi, 1994; van der Kolk, Brown, & van der Hart, 1989). As a result, some studies emphasized the importance of somatic work (Ogden, Pain, & Fisher, 2006; Ogden, Pain, Minton, & Fisher, 2005) and DMT for dealing with trauma (Frank, 1997; Gray, 2001). However, there was disagreement whether visual information was stored in deceptive (Kosslyn, Thompson, & Ganis, 2006) or more abstract proposition forms (Pylyshyn, 2002). In addition, the literature presented different hypotheses on whether the trauma memory was a conscious (Chun & Johnson, 2011) or unconscious experience (Conway, 2001, 2005).

Other developmental researchers emphasized the importance of nonverbal communication patterns in parent and child relationships and attachment. Shai and Belskey (2011) mentioned the importance of the quality of movement, rhythm, space, time, sensation, and touch towards infants. Beebe (2011) noted the importance of nonverbal attachment communication while working in dyadic settings. Other studies described the significant influence of nonverbal gestures like facial expression, voice, rhythm, and movement on the parent-child relationship (Beebe, 2005; Beebe & Lachmann, 2002; Stern, 1985, 1998).

Trauma transmission from parents to children via nonverbal communication might influence the attachment relationship and disrupt a parent's ability to attune to his or her child, which can negatively affect the child.

Effects of PTSD and Trauma Transmission

PTSD

The numerous literature about post-traumatic stress and its outcomes included the *Diagnostic and Statistical Manuals of Mental Disorders* (5th ed.; *DSM-T*; American Psychiatric Association [APA], 2013), which defined and set criteria to evaluate PTSD. Since introducing PTSD as a new diagnosis in *DSM-III* (APA, 1980), through the current *DSM-5*, the APA distinguished PTSD from other psychiatric disorders by its known etiological component—an event that involves life threat, serious injury, or death. The *DSM-III* had considered a traumatic event as a catastrophic stressor that was outside the range of usual human experience. The *DSM-IV* diagnostic criteria for PTSD included a history of exposure to a traumatic event and symptoms from each of three symptom clusters: intrusive recollections, avoidant or numbing symptoms, and hyperarousal symptoms (APA, 2000). Finally, the *DSM-5* added a fourth symptom-cluster category to include disruptive as well as negative cognitions and mood states that began or worsened after experiencing trauma. In addition, the *DSM-5* classified PTSD in a new category, Trauma- and Stressor-Related Disorders, in which the onset of every disorder has been preceded by exposure to a traumatic or otherwise adverse environmental event (APA, 2013).

Symptoms. Van der Kolk (1996) used quantitative analysis to investigate the relationship between the various PTSD symptoms, such as dissociation, somatization, and affect dysregulation. He found all symptoms represented a range of adaptation to trauma. Data were gathered for two adult groups: traumatized, treatment-seeking subjects ($N = 395$) and traumatized, nontreatment-seeking subjects ($N = 125$). Results

showed significant correlations between PTSD, dissociation, somatization, and affect dysregulation. Further, the data showed participants with current PTSD had significantly higher rates of these symptoms than had those who no longer met the criteria for PTSD. Although van der Kolk's research detailed appropriate methods, it failed to investigate the link between the severity of the trauma and the level of traumatic symptoms. The three-group breakdown (two were age-related and one was whether the trauma was natural disaster or interpersonal) was perhaps a good proxy for severity. However, it left room for additional aspects to affect the trauma-severity quantification when applying the same robust data analysis to investigate their interrelationships.

Van der Kolk, Roth, Pelcovitz, Sunday, and Spinazzola (2005) further developed the link between PTSD and other trauma-driven symptoms. They emphasized that PTSD captures only a limited range of posttraumatic psychopathologies, particularly in children. Thus, the authors proposed adding a new diagnostic category to the *DSM-IV* field trial—an extreme stress disorder not otherwise specified (DESNOS). The DESNOS included 27 symptoms arranged into seven categories: (a) regulation of affect and impulses, (b) memory and attention, (c) self-perception, (d) interpersonal relation, (e) relation with others, (f) somatization, and (g) system of meaning (p. 391).

In their 2005 study, van der Kolk et al. researched effects of chronic interpersonal trauma on two adult groups: treatment-seeking ($N = 400$) and nontreatment-seeking subjects ($N = 128$). Results showed a significant relationship between DESNOS and PTSD. Specifically, the DESNOS symptoms were rarely found without PTSD, although PTSD symptoms could be found without DESNOS. The DESNOS symptoms were found (in addition to PTSD) when the trauma was interpersonal (i.e., not merely a natural

disaster), when the individuals were exposed to longer trauma, or when the individuals were exposed to additional traumatic events. The strong correlation among the DESNOS syndromes with PTSD implies that a partial, sequential treatment as described in van der Kolk et al.'s paper may not be the best approach for treatment. Perhaps, a more holistic approach that deals with "one" problem instead can deliver better results.

Van Dijke et al. (2012) investigated a sample of adult psychiatric patients ($N = 472$). These patients' diagnoses included borderline personality disorder (BPD), somatoform disorder (SoD), combined BPD and SoD (BPD-SoD), and affective or anxiety disorder. Results showed a significantly higher volume of DESNOS symptoms for the BPD and the combined BPD-SoD groups than for the other diagnostic groups. These two groups (BPD and BPD-SoD) also had the most extensive childhood trauma, indicating a possible correlation between DESNOS symptoms and childhood trauma. Thus, van Dijke et al.'s findings were similar to van der Kolk et al.'s (2005) findings relating DESNOS symptoms and childhood trauma.

Ford, Courtois, Steel, van der Hart, and Nijenhuis (2005) described a three-phase integrative model to assist in treating posttraumatic self-dysregulation: (Phase 1) engaging safety and stabilization; (Phase 2) recalling traumatic memories; and (Phase 3) enhancing daily living. Although the authors well described the model, it is important to note that it remains a theory in need of research and testing.

Etiology and Risk Factors. Higher levels of PTSD symptoms have been linked to a number of factors: the trauma history (Bedard-Gilligan et al., 2015; Irish et al., 2008); how the traumatic event was experienced at the time; greater length of exposure to trauma (van der Kolk et al., 2005); long-lasting and irreversible traumatic events

(Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995); the chronic and ongoing nature of events; the suddenness of traumatic events (Terr, 1991); and events occurring in childhood (van der Kolk, 1996; van der Kolk et al., 2005). Additional factors included exposure to repeated, multiple, or abusive stressors (Elitzur & Kaffman, 1982); traumatic events perceived as uncontrollable (Weigel, Wertlieb, & Feldstein, 1989); separation from family during crises (Yule & Williams, 1990); and traumatic events perpetrated by humans rather than natural causes (Stoddard, 1985).

Treatment. Symptoms of PTSD negatively affected quality of life (Zatzick et al., 1997) and were associated with disruptions at work (Smith, Schnurr, & Rosenheck, 2005) as well as with poor relationships with partners and children (Galovski & Lyons, 2004). In addition to PTSD symptoms, depression and somatic symptoms were sometimes assessed in victims of traumatic events and recalled as comorbid symptoms (Dekel, Ein-Dor, Rosen, & Bonanno, 2017).

Current empirical-based treatments include cognitive behavioral therapy (CBT); eye movement desensitization and reprocessing (EMDR; Van Etten & Taylor, 1998); narrative reconstruction (NR; Peri & Gofman, 2014); prolonged exposure (PE); cognitive processing therapy sertraline (SER; Feeny, Zoellner, Mavissakalian, & Roy-Byrne, 2009); and virtual reality exposure (VRE; Dekel, Solomon, & Ein-Dor, 2016; Reger et al., 2013).

Treatment of PTSD relies on the survivor's memory of the event. Dekel, Solomon, and Ein-Dor (2016) conducted research to determine whether PTSD symptoms led to modification in the memory of the trauma. Participants in this study ($N = 103$) were former prisoners of the 1973 Yom Kippur War. They were assessed in 1991 and

2008 with self-reporting questionnaires. The results showed the participants' recollections became increasingly negative over time. Research findings suggested the individual's PTSD symptoms and emotional state might influence the original memory of the traumatic event. In addition, studies noted treatments that reduced anxiety and hyperarousal symptoms, such as B Block, may offer effective treatment for PTSD by blocking memory reconsolidation (Brunet et al., 2008; Nader, Schafe, & LeDoux, 2000).

Van Etten and Taylor (1998) showed treatments such as CBT and EMDR outperformed control conditions in reducing PTSD symptoms, and Diehle, Opmeer, Boer, Mannarino, and Lindauer (2015) found both CBT and EMDR effective for treating children with PTSD. Although there was no treatment preference between CBT and EMDR (Foa, Keane, & Friendman, 2000; Seidler & Wagner, 2006), current studies highlighted the effectiveness of EMDR in treating PTSD. According to Schäfer et al. (2017), EMDR is an evidence-based treatment for PTSD. Another recent study suggested that EMDR seemed an efficient therapy to reduce PTSD symptoms and further restore brain structural organization (Boukezzi et al., 2017).

Peri and Gofman (2014) investigated NR as a module to treat intrusive symptoms and memory disturbances in PTSD patients. They described NR as a brief and focused intervention that combines elements of CBT with psychodynamic elements. They wrote that the goal of NR is "to create a cohesive and chronological narrative of trauma while simultaneously addressing it to the personal significance of the trauma and integrating it in patients' autobiographical memories" (p. 1). This description accords with research on memory reconsolidation and trauma memory modification linked with recovery (Dekel et al., 2016). Peri and Gofman (2014) conducted a study with six PTSD patients. Their

results showed significant reductions in PTSD and depressive symptoms, which, according to the authors, demonstrated that NR may be an effective module in PTSD treatment. However, as the authors acknowledged, the limited sample was insufficient to generalize conclusions about the treatment efficacy.

Cloitre, Koenen, Cohen, and Han (2002) studied 58 women undergoing CBT for PTSD related to childhood abuse. They randomly assigned participants to two groups: one group continued to receive CBT; the other group was called the “minimal attention waiting list” (p. 1067). The treatment group received two treatment phases for a total of 16 weeks. Phase 1 focused on skill training in affect and interpersonal regulation. Phase 2 included modified prolonged exposure, in which clients described their traumatic events while using their imagination and memories in a detailed and emotionally engaging fashion. The results showed that participants in the treatment group had significantly improved affect regulation and interpersonal skills, and lower PTSD symptoms, compared with the minimal attention waiting list group. Further, the group maintained these gains at the three- and nine-month follow-ups. However, the authors neither described the “minimal attention” the other group received nor determined whether those participants received treatment elsewhere.

Feeny, Zoellner, Mavissakalian, and Roy-Byrne (2009) conducted two studies to understand women’s preference for PTSD treatments as well as treatment effectiveness. They compared the choice between PE and SER antidepressant treatments. The first study compared rates of PE and SER treatment choice in a sample of 74 women exposed to trauma. Participants in the second study were 31 female assault survivors with chronic PTSD who received their choice of PE or SER for 10 weeks. Results in both studies

showed a preference for PE over SER (82% and 74.2%, respectively), although women with a co-occurring major depressive disorder were more likely to choose SER. The researchers claimed that for those women, PE was more effective, but did not well support or explain that conclusion.

Reger et al. (2013) conducted quantitative research with soldiers deployed in Iraq to determine their preference for PTSD treatment. They provided the soldiers ($N = 174$) a written hypothetical scenario about difficulties after combat, as well as descriptions of PE; VRE, which is an innovative approach for activating the trauma memory during exposure therapy for PTSD; and FDA-approved medication for PTSD. Results showed a significant preference for PE and VRE over medication. Some results can be explained by patient shame and embarrassment associated with receiving psychiatric medical treatment. However, the same participants were also significantly less willing to recommend medication treatment to others and had significantly less confidence in its efficacy. The researchers concluded that the soldiers' reactions to a particular PTSD treatment shaped their willingness to seek care and explore treatment options. Regrettably, the researchers did not provide the name of the medication or the nature of the VRE—facts that diminished the reliability of their methods and reduced the validity of their findings.

Trauma Transmission

Trauma transmission occurs when offspring (second- or third-generation) of trauma survivors suffer from similar trauma-related symptoms as their caregivers (Barocas & Barocas, 1973). The *DSM-5* stated people could be traumatized without being physically harmed or threatened with harm, but through learning about a traumatic

event occurred to a close family member or close friend. Although similar to the concepts of *secondary trauma* and *trauma transmission*, the *DSM-5* did not explicitly mention these terms (APA, 2013).

Offspring of Holocaust survivors. A variety of researchers examined the transfer of trauma to the offspring of Holocaust survivors (e.g., Last & Klein, 1984; Solomon, Kotler, & Mikulincer, 1998; Yehuda et al., 1998). Researchers found that offspring of Holocaust survivors suffered from symptoms similar to the survivors, including depression, anxiety, maladaptive behavior, guilt, and phobia (Barocas & Barocas, 1973).

Barocas and Barocas (1979) found that offspring of survivors suffered from impaired object relations, low self-esteem, narcissistic vulnerability, negative identity formation, personality construction, and considerable affective impairment. They also shared a collective memory of the Holocaust, dreamt nightmares of Nazis, and related to the Holocaust as an important event in their lives, even though they were born after it occurred. Barocas and Barocas' work resulted from many years of intensive investigation beginning in 1968, based on interviews with dozens of offspring of concentration camp survivors. However, they offered neither the exact sample size nor descriptions of their methodologies and analyses.

Sigal, Silver, Rokoff, and Ellin (1973) found offspring of survivors felt less able to deal with problems and had more personality disorders than did those who were not offspring of survivors. Their quantitative study included a sample of survivors ($N = 25$) of the Nazi persecution (SNP) and a control group ($N = 20$) who agreed to be tested and interviewed. Each group included offspring of survivors between the ages of 8 years and

14 years or between 15 years and 17 years. Significant differences between the SNP group and the control group were found with the offspring who were 15 years to 17 years old. With offspring between 8 years and 14 years old, the only significant difference related to unsocialized aggression and psychopathy. However, the study did not mention the number of participants in each age group, which left the research validity an open question.

Yehuda, Schmeidler, Wainberg, Binder-Brynes, and Duvdevani (1998) compared lifetime and current PTSD among offspring of Holocaust survivors ($N = 100$) with a control group of Jewish non-offspring ($N = 44$). Current and lifetime PTSD was found in 39% of the offspring group but in only 9% of the control group, even though both groups had similar exposure to trauma in life. These findings demonstrated an increased vulnerability to PTSD and other psychiatric disorders among offspring of Holocaust survivors, thus identifying adult offspring as a possible high-risk group within which to explore the individual differences that constitute PTSD risk factors.

A study by Yehuda, Schmeidler, Giller, Siever, and Binder-Brynes (1998) found offspring of survivors of traumatic events more likely to develop PTSD if their parents suffered from PTSD. The average number of traumatic life events, as well as the age of study participants, was similar in both groups in their study. Participants in this quantitative research were Holocaust survivors ($N = 22$) and their offspring ($N = 22$). The research included interviews attempting to assess participants' lifetime trauma histories, effects of trauma on their lives, levels of intrusive and avoidance symptoms in response to reminders of the Holocaust, current and lifetime PTSD, and psychiatric disorders other than PTSD. The results showed significant relationships between parents

and children regarding the effect of trauma on their lives. In addition, offspring of parents suffering from PTSD were more likely to develop PTSD around their own traumatic events. Many potential factors—from transmission to biology—can account for this link, and the research did not adequately consider such causes.

Gangi et al. (2009) examined 40 non-immigrant Italian Jews who were offspring of Holocaust survivors. The researchers compared these participants with a control group comprised of the offspring of Italian Jews who had been able to hide during the war. The researchers found higher levels of anxiety, inhibition of aggression, and relational ambivalence and lower self-esteem with the Holocaust offspring group, regardless of lifetime trauma. Importantly, although the control group consisted of offspring of children who lacked direct exposure to the Nazis, hiding from the Nazis was experienced as a trauma and might have influenced their psychological development and attachment patterns.

Solomon, Kotler, and Mikulincer (1998) examined the relationship between Holocaust survival, PTSD, and becoming a soldier. The study design included Israeli soldiers who were also Holocaust survivors ($N = 44$) and a control group ($N = 52$). The results showed offspring of Holocaust survivors developed similar symptoms to their parents as well as significantly higher rates of PTSD than did the control group.

Another study (Baider et al., 2000) assumed that when dealing with a life-threatening event, the offspring of Holocaust survivors would be more sensitive to distress. Participants in the study were women with breast cancer who were also second-generation Holocaust survivors ($N = 106$). The researchers compared the participants to women with breast cancer whose parents had not experienced the Holocaust ($N = 102$).

The Holocaust-survivor offspring group showed, on average, a higher level of distress and displayed more psychopathological symptoms than did the control group.

Additionally, the results showed extremely high scores in both the intrusion and the avoidance of the impact of the event.

Neuroscience research addressed the biology of trauma transmission to offspring (Yehuda et al., 2000). Participants in this quantitative research were adult offspring of Holocaust survivors ($N = 35$) who were compared to healthy subjects who were not offspring of Holocaust survivors ($N = 15$) by measuring 24-hour urinary cortisol excretion. Results showed adult offspring of Holocaust survivors had lasting hormonal changes similar to their parents who suffered from PTSD. Although this research result was interesting and has potential, the sample was too small for validity—it would require more work and an expanded sample.

Some researchers found that trauma did not transmit across second and third generations. Sagi-Schwartz et al. (2003) examined three generations—Holocaust survivors, their daughters, and their infant grandchildren—and a control group with no relationship to the Holocaust. The study included 98 families. The researchers found the survivors showed severe signs of traumatic stress and more unresolved trauma than did the control group. However, the survivors were not impaired in their general adaptation, and the traumatic effect did not transmit to their offspring. According to the authors, the survivors may have been able to protect their offspring from their war experiences, although they themselves still suffered from the trauma. Similarly, van IJzendoorn, Bakermans-Kranenburg, and Sagi-Schwartz (2003) studied 4,418 children of Holocaust survivors and found no evidence for intergenerational trauma transmission. Such

transmission existed only in the sample of participants recruited through survivor support groups. Notably, although the results revealed no evidence of trauma transmission, and the study was clear and with a large sample size, only limited, specific measures were tested. Trauma transmission might have occurred in different ways.

Recent studies found a positive outcome in the way offspring of Holocaust survivors dealt with traumatic events. Dekel, Solomon, and Rozenstreich (2013) conducted a research with two samples of Israeli war veterans that included second-generation holocaust survivors (SGH) and comparable veterans' with no such family history (non-SGH). Their results indicated that in the initial postwar years, the SGH experienced higher PTSD and comorbid symptoms than the non-SGH group. However, in a later follow-up, the results reversed; the SGH group experienced lower rates of PTSD than the non-SGH group. The research suggested a transmission of positive trauma outcomes from one generation to another.

Dekel, Mandl, and Solomon (2013) reported similar findings. Their research examined posttraumatic growth reported by Israeli veterans, comparing Holocaust survivor offspring' with non-Holocaust survivor offspring. Result shows the offspring of Holocaust survivors reported less posttraumatic growth than did the other veterans. This research suggested transmission of trauma from one generation to the next might have a positive impact on the offspring's propensity for growth after experiencing a traumatic event. However, the researchers also noted that being a second-generation Holocaust survivor limited the positive effects.

Trauma transmission and personality. Numerous studies have tried to classify the personality characteristics of offspring of Holocaust survivors. Last and Klein (1984)

found survivors' offspring who were in their teens tended to describe themselves as more dependent and needing more assistance than did subjects in the control group. Rowland-Klien and Dunlop (1998) reported survivors' offspring had difficulty with the process of individuation, in order not to cause pain to a parent who suffered from loss. Meanwhile, Rose and Garske (1987) found offspring of survivors tended to see their parents as discouraging of independence and assertive behavior.

Based on in-depth interviews with 196 second-generation parents and their adolescent children, Scharf and Mayseless (2011) found three themes of disorganizing experiences carried across generations: focus on survival issues, lack of emotional resources, and the need to please and satisfy parents' needs. These themes reflected the frustration of three basic needs: competence, relatedness, and autonomy. They noted this frustration might become disorganizing when it involves stability, potency, incomprehensibility, and helplessness.

Although other studies showed connections between personality and offspring behavior (e.g., Last & Klein, 1984), Bachar et al. (1994) found no significant differences in the way a group of grandchildren of Holocaust survivors and a control group expressed aggression. No evidence supported their hypothesis that offspring of trauma survivors tended to externalize aggression, particularly regarding the third generation.

Intergeneration transmission in other cultural contexts. Intergenerational trauma transmission was found in cultural contexts other than the Holocaust: Armenian genocide, Japanese internment camps, wars against Native Americans (NA) and Alaska Natives (NS), the Iraqi invasion of Kuwait, Russian gulags, and slavery in the United

States (Connolly, 2011; Danieli, 1998; Karenian et al., 2010; Laurelle & Myhra, 2011; Nagata & Cheng, 2003; Saathoff, 1998).

Laurelle and Myhra (2011) conducted qualitative research with NA and NS who had overcome substance abuse problems. The research method involved open-ended, face-to-face, two-hour interviews. They concluded that historical trauma was a relevant and on-going problem and a cause of substance abuse in NA and NS families. However, they also mentioned that historical trauma in NA and NS peoples has a message of strength and survival. Though the sample was wide for a qualitative study ($N = 13$), future research would need to consider statistical analysis and a control group for comparison.

Karenian et al. (2010) investigated collective trauma transmission within Armenian society after the events of 1914 to 1918. Their quantitative study considered 689 people of Armenian origin residing in Greece and Cyprus who answered a questionnaire regarding their culture and experience of collective trauma. Over a third (35.7%) presented at least subclinical reactions to the events over their lives. Women, older participants with a close relative lost during the events, and those with strong connections to the Armenian community were most vulnerable. The authors concluded that cross-generational traumatizing events are long lasting and must be considered during therapy.

Trauma transmission from mothers to children. Levi (2006) designed a qualitative phenomenological study with eight Israeli women who were pregnant or gave birth after experiencing terrorism. They collected data through open-ended interviews with the women, who shared their stories and interpreted their experiences. Four major

themes emerged from the interviews: loss, maternity through the prism of otherness, maternity as empowerment, and transformation. The women reported experiencing fear, depression, anger, and physical and emotional pain. In addition, they reported guilt that they were not living up to their own expectations for motherhood. Moreover, the mothers described themselves as overprotective and constantly fearing for their children. They all mentioned that the traumatic event transformed their ability to function. Although this research study was suggestive, its small, self-reporting sample left room for future studies and examination.

Whereas other researchers (e.g., Engel, Berkowitz, Wolff, & Yehuda, 2005) studied mothers who had been exposed to trauma, Coates, Schechter, and First (2003) described the children of traumatized parents. Coates et al., themselves therapists, described three situations of childhood exposure to trauma. A *moderating effect* occurs when an event directly traumatizes the child but the mother's relationship with the child and her ability to contain influence whether the child becomes symptomatic. In the *vicarious traumatization model*, parents experienced trauma, but the child did not. The trauma can affect the parents' relationship with their child by altering their responsiveness and thus promote the child's development of trauma-related symptoms. The *compound effect* model happens when both child and mother have been exposed to trauma and each influences the others' symptomatology.

Coates et al. (2003) wrote about the cases of two preschool children they treated. The children's parents were traumatized by the terrorist attacks in the United States on September 11, 2001 ("9/11"). The researcher-therapists had seen the children, Maria and Abbey, as patients soon after 9/11 and then five months later. Maria's case study

exemplified the vicarious traumatization model, and Abbey's, the compound effect model. In both cases, the children suffered from nightmares after the attack and had difficulty coping with their feelings in the face of their parents' distress and confusion. In addition, both children were unable to differentiate their parents' experiences from their own. Although the researchers well described these case studies and three models, they offered no research to support or validate the models.

Hulette, Kaehler, and Freyd (2011) examined mother-to-child trauma transmission. They studied 67 children aged seven years to eight years, as well as their caregivers who had experienced some stressful life event. In order to investigate the influence of various kinds of trauma on mother-child dyads, the researchers distinguished between high betrayal trauma (HBT) and lesser betrayal trauma (LBT). Cases of HBT included sexual contact with someone close, experiencing a deliberate severe attack that left marks, or experiencing emotional or psychological mistreatment over a significant period time with someone close to the child. The study found strong correlation between HBT experiences and revictimization experiences in adulthood, with a high level of dissociation in both children and caregivers. This is compelling research about HBT, but the study could have drawn more significant conclusions about LBT.

Kestenberg and Robbins (1975) pioneered studying nonverbal behavior to understand children's typical developmental stages. They conducted wide-ranging observations of infants and subsequently developed the KMP, "a descriptive movement-nonverbal behavior classificatory system developed within a psychodynamic frame of reference" (Sossin & Birklein, 2006, p. 46).

Birklein and Sossin (2006) and Sossin and Birklein (2006) used KMP to investigate transmission of stress from parent to child. The KMP patterns of *tension flow*, *bipolar shape flow*, and *unipolar shape flow* account for a third of the overall KMP score. Tension flow concerns mood-regulatory mechanisms expressed by muscle elasticity and tension (Birklein & Sossin, 2006). Tension flow includes *bound flow*, *free flow*, and *neutral flow*. Bound flow describes what happens when the movement is limited: “fighting” but “safe” (p. 131). Free flow describes a releasing movement: “indulging” but “danger” (p. 131), whereas neutral flow refers to the absence of muscle elasticity and tension.

Bipolar shape flow reflects shifts in affective relations with the environment (Birklein & Sossin, 2006). It also refers to self-feelings expressed by symmetrical changes in body shape through breathing. These changes include expansion, “comfort” (p. 131), and contraction or “discomfort” (p. 131). Unipolar shape flow expresses feelings associated with attraction or repulsion. The body grows in “approach” (p. 131) or shrinks in “avoidance” (p. 131) asymmetrically. Birklein and Sossin hypothesized they might find:

Positive correlation between stress levels in the parents and movement patterns (as reported on the self-report scales) associated with bound flow and fighting tension flow attributes, and with shrinking bi- and unipolar-shape flow. Such correlation would follow directly for the adults, and through transmission process for the children. . . .High stress would correspond to more intrapersonal mismatching between tension and shape

flow patterns and to more interpersonal discordance between child and parents patterns across each movement cluster. (p. 131)

Participants in the study included 26 parent-child dyads ($N = 52$) from the New York metropolitan area who experienced subclinical stress (Birklein & Sossin, 2006). The children ranged in age from 11 months to 53 months. The authors first administered three standardized self-report stress scales pertaining to life events and parenting in order to measure the parents' stress levels. Then, they filmed three 15-minute parent-child dyad sessions. One session involved free play; the second, structured play; and the third, feeding. Using the Parent-Child Early Relational Assessment Scale, they observed three clusters of movement pattern: tension flow, bipolar shape flow, and unipolar shape flow.

Results showed that highly stressed parents presented more neutral abruptness and neutral flow adjustment (Birklein & Sossin, 2006). In addition, discord between stressed parents and their children, and a noted decrease in stressed parents' attunement to their children, were evident. Although the research offered extensive and original description and analysis, people who are not KMP experts may not understand its results.

Trauma transmission from fathers to children. Davidson and Mellor (2001) compared three groups: children of Vietnam veterans who suffered from PTSD ($N = 30$), children of Vietnam veterans without PTSD ($N = 20$), and a control group of children whose fathers were not veterans ($N = 33$). The researchers observed significantly different levels of family functioning among all three groups. They found the lowest level of family functioning in the children of veterans with PTSD. However, they found no significant difference between the self-esteem and the symptomatology scores for any

offspring group. Although this study raised interesting questions, it is important to keep in mind that it engaged a snowballing recruitment technique (i.e., participants recommended other participants). This technique can be useful, but also may bias a sample by limiting the differences among participants.

In a review of secondary trauma in combat veterans' children, Dekel and Goldblatt (2008) claimed the literature focused on three variables: mental distress, family functioning, and self-esteem. Mental distress among children of trauma victims was associated with a father's intensity of trauma and his extent of distress. Dekel and Goldblatt also noted PTSD symptoms might shape the father's ability to develop meaningful and functioning relationships with his children. Lastly, the authors noted studies found no significant difference in self-esteem between children of war veterans with PTSD and control groups. Again, although this is a provocative finding, it is grounded in a review of existing literature rather than original research.

Attachment Theory

Research on parent-child interaction must reckon with Bowlby's (1969) attachment theory. Fundamentally biological, attachment theory claimed levels of secure attachment between parents and their offspring can predict function. The theory assumed infants are born with a tendency to seek relationships with their adult caregivers for survival (Bowlby, 1973). Bowlby (1988) highlighted the importance of two variables: consistency and quality of the relationship. According to the theory, consistent and high quality attachment between mother and infant influenced feelings of safety and security. Likewise, a mother's availability and attunement influenced the child's development of trust feelings towards the mother. Infants who felt secure would use their mother as a

“secure base” to explore the environment. Thus, Bowlby (1979) concluded the security level of the attachment between mother and child can predict future relationship and functioning.

Ainsworth, Blehar, Waters, and Wall (1978) also addressed the role of a mother’s attunement and sensitivity at the beginning of her infant’s life. They hypothesized that mothers’ increased attachment to their children’s needs helped develop emotional attachment. In addition, they claimed the mother’s emotional availability not only focused on contributing to the dyadic process, but also influenced specific infant-behavior contributions to the dyad dialog.

Ainsworth et al. (1978) developed a procedure called “the strange situation.” They evaluated the behavior of infants and young children reunited with mothers following short periods of separation during which they stayed with a stranger. They classified children’s attachment patterns after these separations and reunifications three ways: (1) the *secure pattern*, which occurred when the child felt discomfort and cried after the mother left the room, and when she returned, the child was excited, happy, and looked for proximity; (2) the *avoidant pattern*, in which the child did not feel discomfort when the mother left and did not try to connect with her when she came back; and (3) the *ambivalent or resistant pattern*, wherein the child felt discomfort after the mother left and could not calm down upon her return.

Main and Solomon (1990) studied another attachment pattern: disorganization or disorientation. This pattern occurred when the child’s response was unclear after the mother left or returned to the room. The theorists mentioned that the children’s unclear

behavior expressed their inability to be organized and understood after separation from their mothers.

Both Bowlby and Ainsworth et al. examined nonverbal patterns between mother and child. Bowlby (1973) found that babies' crying and smiling were means to create proximity with the mother, and Ainsworth et al. (1978) characterized children's attachment patterns based on such nonverbal patterns (smiling, crying, stiffening, and leaning away). Later researchers hypothesized that stress expresses itself through nonverbal behavior patterns first (Beebe & Lachmann, 2002).

Attachment Interaction and Parental Trauma

Laor et al. (2001) explored the psychological functioning of both mothers and children after traumatic events for 81 families. They first observed subjects 30 months after exposure to SCUD missile attacks in Israel and then interviewed them five years after the attack. All participants were of the same low socioeconomic class and lived in the same neighborhood. The study included one-hour interviews with children eight years to ten years old and two-hour interviews with their mothers.

Results showed a decrease in most symptoms over time, but an increase in avoidant symptoms in the children (Laor et al., 2001). Severe posttraumatic symptoms were reported in 8% of the children. Meanwhile, the researchers divided the mothers into three categories based on their psychological functioning ($n = 27$ in each): poor, moderate, and good functioning. Data showed children of the poorest-functioning mothers had the most trauma symptoms, and children of the best-functioning mothers had the fewest. Furthermore, symptoms in children of the poorer-functioning mothers were more likely to worsen over time, whereas symptoms in the children of better-functioning

mothers decreased. The research concluded the mothers with poor functioning failed to meet mothering requirements. In addition, the mothers' functioning more likely influenced younger children than older children. This result suggested older children are more autonomous, whereas younger children attach more rigidly to their mothers after a traumatic event. Lastly, the research showed that although symptoms decreased five years after the exposure to terrorism, factors identified immediately after the event continued to influence the children.

Nonverbal Attachment Interaction and Trauma

Crnic et al. (1983) found highly stressed mothers less able to identify their infants' cues and less attuned to the cues. The study sample drew upon 79 mothers and their infant children. The researchers obtained data when the infants were at one, four, eight, and twelve months of age. The study assessed the difference in the infants' and their mothers' behaviors during the children's first year of life for mothers of preterm ($n = 37$) and full-term ($n = 42$) infants. Results showed preterm infants used less nonverbal pattern signaling and were less active, less vocal, and smiled less than did the full-term infants. Mothers of preterm infants, on the other hand, were more active and gave more social signaling without reciprocal signaling from the infants. This phenomenon is known as *synchrony* in the dyadic interaction.

Shai and Belskey (2011) developed a concept called *parental embodied mentalizing* (PEM). They described PEM as a "parent's capacity to appreciate, even unconsciously, the infant's mental states and their role in motivating behavior" (p. 173), which relates to the infants' attachment security.

Shai (2010) wrote that even though all current measurements of parental mentalizing rely on parents' semantic and verbal expressions, exclusive reliance on verbal processes may fail to capture interactive mentalizing processes fully. Thus, Shai introduced PEM as an embodied relational perspective for investigating parent-infant interaction, referring to parents' capacity to "(a) implicitly conceive, comprehend, and extrapolate the infant's mental states from the infant's whole-body movement, and (b) adjust their own kinesthetic patterns accordingly" (p. 107). Shai concluded by outlining directions for future research.

Shai and Fonagy (2014) created the PEM measurement system as an observational coding system for video records of parent-infant interactions. This measurement system served as the basis for assessing parents' embodied mentalization capacities. It aimed to capture the quality of parental mentalization as it unfolds kinesthetically during the interaction and focuses on whole body kinesthetic expression—and *not* on gaze pattern, facial expression, or verbal behaviors.

The PEM measurement system (Shai & Fonagy, 2014) registered three stages for coding. The first stage, called *embodied circle of communication* (ECC), attempts to identify the PEM episodes. The second stage involves describing the kinesthetic sequence of each ECC in terms of movement qualities. Movement qualities relate to movement tempo and direction, where the interactions occur in the space, pacing and pathways in the space, and how much muscle tension is used to execute the movement. The third stage involves rating the overall quality of PEM in each ECC event and then creating a summary—the global PEM rating. The rating is scaled from one to nine based on all individually scored ECC events (pp. 13-14).

Shai and Fonagy (2014) found PEM measured six months after childbirth could predict infants' secure attachment at 15 months. In addition, the capacities measured at six months significantly predicted individual differences in children's "social skills, social competence, and internalizing and externalizing problems at 54 months" (pp. 18-19). However, the authors did not describe details regarding this study. For example, they did not describe the number of participants, recruitment, or further information about the research methodology.

Mother and Child Relationships and the Connection to Body

Mahler, Pine, and Bergman (1975) theorized that human communication begins inside a symbiotic bubble. The bubble holds basic processes between the mother's and the infant's bodies. In the first few months of life, infants cannot separate their bodies from their emotions. The bubble between mother and child thus allows trust building and creates an environment that facilitates separation and individuation.

D. W. Winnicott (1971) wrote about "potential space," a physical and hypothetical space between the mother and her infant. This space lies between reality and imagination—the internal and the external perceptions of the infants.

D. W. Winnicott (1958) recognized the importance of a mother's holding, bodily and metaphorically. Holding allows infants to be in contact with the world without experiencing overwhelming stimulation. Bion (1963) similarly described the mother's body as a container: the mother's hands support the baby's body in symbolic and material ways.

Krueger (1989) believed a mature perception of self contains an organized body perception. In the first developmental level, a few months after infants are born, the self

is perceived through bodily sensations. Touch facilitates separation of the body from the outside world. On the second level, aged six months to nine months, the body's physical limits enable a perception of self and not self. The third level combines self- and body-perception. In this developmental model, self-perception depends on body perception. The body is thus responsible for building an integral sense of self.

Therapeutic Intervention

As discussed in the following sections, many options for therapeutic intervention apply when working with stressed mothers and children. Group therapy as a therapeutic intervention is a recommended tool based on the belief that participants benefit from the support of and shared feelings with others in similar situations (Van Puyvelde et al., 2014). Its effectiveness in working with trauma patients was noted in the literature (Sloan, Feinstein, Gallagher, Beck, & Keane, 2013; Smith et al., 2005). Further, because traumatic events tend to be remembered at a sensory level (van der Kolk & Fisler, 1995), nonverbal interventions assist group participants to express experiences too threatening to verbalize (Ambra, 1995). Nonverbal interventions include dance therapy in general and mirroring in particular (Berrol, 2006; Fraenkel, 1983; Hartshorn et al., 2001; Mills & Daniluk, 2002).

Group Therapy

Several authors addressed the effectiveness of group therapy. For instance, Van Puyvelde et al. (2014) emphasized the benefit in supporting and sharing feelings with others in similar situations. Lin (2014) garnered from the literature the tendency of humans to gather in groups in order to cope with challenges and stressful events

(e.g., Hlebec, Mrzel, & Kogovsek, 2009; Taylor, 2006). In addition, he mentioned joining a group represents being active about creating change.

Group analysis appeared to be an effective method of treating trauma survivors and patients with PTSD (Sloan et al., 2013; Smith et al., 2005). Hall and King (1997) mentioned that women survivors benefited from the group's acceptance and mirroring back their worth. In addition, group therapy diminished survivors' sense of isolation, guilt, and shame and increased their wellbeing and confidence, enabling them to make positive changes in their lives.

Group counseling and psychotherapy was proven an effective intervention mode for various difficulties, at least as effective as individual therapy (Baines, Joseph, & Jindal, 2004; Burlingame, MacKenzie, & Strauß, 2004; Burlingame, Strauß, & Joyce, 2013; Burlingame, Whitcomb, & Woodland, 2014; Piper & Joyce, 1996; Shechtman, 2003).

Group modalities have the potential to increase social support by forming positive peer pressure to create social interaction and attend the group (Maguen et al., 2012; Mott et al., 2013; Ready et al., 2012; Ready et al., 2008). In addition, being in a group of peers who experienced similar types of trauma creates a unique sense of validation and normalization (Ready et al., 2012; Smith et al., 2005).

Nonverbal Therapeutic Intervention

It has been argued that traumatic events tend to be remembered at a sensory level—as visual images and olfactory, auditory, and kinesthetic experiences (van der Kolk & Fisler, 1995). In this case, “information that has been only briefly fixated appears to be encoded automatically and to form a relatively stable representation

in long term memory that then support both priming and conscious form of memory such as recognition” (Brewin, 2014, p. 72). One application may be a variety of visual representations of a particular event that differ in their content and in the extent feature integration takes place.

It is also been claimed that a high level of perceptual memories (e.g., visual, auditory, and sensory) can be preserved over long periods. It is also known that verbalization can have a variety of effects, depending on the experimental design and the nature of the verbalization. However, under conditions in which access to episodic memories is compromised, studies using senesce propose an alternative, long-term storage of consciously experience visual memories (Conway, 2009).

Brewin, Gregory, Lipton, and Burgess (2010), in their revised theory of PTSD, suggested perceptual memories, which remain consciously accessible, consist of sensation representation and physical expression.

Furthermore, parental stress related to these memories may be transmitted to children via nonverbal communication, which may influence attachment relationships (Sossin & Birklein, 2006). As such, parental trauma may disrupt the parent’s ability to attune to his or her child, which in turn may negatively affect the child (Beebe, 2011; Crnic et al., 1983; Fonagy et al., 2002; Laor et al., 2001).

In a quantitative study data of 46 individuals with PTSD, van der Kolk and Fisler (1995) found adults with childhood trauma tended to remember their abuse in visual images and kinesthetic sensations and had significantly more pathological self-soothing behavior than did those who suffered trauma as adults. This finding suggested childhood trauma victims might have greater difficulty regulating internal states. In van der Kolk

and Fislser's study, all participants reported remembering the trauma first in the form of somatosensory or emotional flashbacks, highlighting the importance of physiological therapy of traumatic experience.

Traumas were thought to be stored in the body (Shahar-Levi, 1994; van der Kolk et al., 1989), which emphasizes the importance of somatic work (Ogden et al., 2006; Ogden et al., 2005). Frank (1997) took a controversial stance, arguing that only body-directed therapy could be effective in cases of childhood sexual abuse. Gray (2001) highlighted the importance of including the body in the healing process of torture survivors because their bodies had been violated directly.

Shahar-Levi (1994) argued that unremembered occurrences, such as preverbal or traumatic events, are grouped into an emotive memory cluster, which is then created and stored in the body. She theorized such clusters function as hidden attractors in the psychophysical organism. Furthermore, the relationship between emotion and motion starts at the beginning of life. Because the motor system is not yet developed at this stage, emotional events might strongly influence future physical development. Shahar-Levi claimed traumatic events create a stress and anxiety cluster that leads to contraction and passivity in movement. She related her theory to concepts originated by Freud, D. W. Winnicott, and others and described four cases in which movement, body posture, or physical experience uncovered childhood memory. In all four cases, the absence of primary caretakers led to difficulty controlling the body and movement. Past interactions continued to influence body behaviors even after those interactions were long over.

Although Shahar-Levi's (1994) paper provided a good literature review on primal memories, its shortfalls should be addressed. First, the paper chronicled case studies but

not the research conclusions. The cases were not described thoroughly, which left doubts about multiple aspects of the therapy and raised the question why some portions of the treatment were not mentioned. Additionally, the paper was strongly biased in that it did not detail other cases that did not conform to Shahar-Levi's theory. Lastly, Shahar-Levi regarded the mentioned cases as supporting her main hypothesis. Although the support may have existed, the distinction between true memory and the illusion of memory that results from association was not always clear.

The effectiveness of body-oriented group psychotherapy based on Ogden's principles (Ogden et al., 2006; Ogden et al., 2005) and sensorimotor psychotherapy (SP) was examined in a pilot study (Langmuir, Kirsh, & Classen, 2011). The analysis used a quantitative approach with data gathered from 10 women with a history of child abuse participating in 20 weekly SP sessions. The study provided participants an opportunity to develop and practice SP to find healthier strategies for managing relational challenges in their daily lives. The study also tried to increase the participants' ability to manage hypoarousal reactions and to counteract their tendency to dissociate.

During the study, participants had the opportunity to recognize and ultimately avoid traumatic reenactments both inside and outside the group. Based on pretreatment, posttreatment, and six-month follow-up assessments, the SP group assisted the participants to reconnect with their bodies and use them as sources of information about their thoughts and feelings. The data showed reduced trauma symptoms such as body awareness, dissociation, and receptive soothing. However, this quantitative study had a small sample and no control group, and thus could not validate the changes and improvements were due to the SP group.

Beebe et al. (2012) created a special therapeutic project for infants, young children, and mothers affected by the World Trade Center attacks on September 11, 2001. The project included a group of eight therapists, including a dance therapist and a psychologist knowledgeable in KMP. The therapists had worked for 10 years with approximately 40 families, all of whom had suffered the loss of husbands and fathers. Participants in this group were women widowed while pregnant or with infants born in the previous year, 2000. The therapists used verbal and nonverbal approaches based on Laban Movement Analysis (LMA) and KMP.

Tortora (2006, 2010) worked as a dance therapist with infants, children, and parents. She developed the “Ways of Seeing” technique, an early childhood therapeutic approach for parents and their babies. This technique used implicit ways of knowing, nonverbal exchange, and body movement-oriented experiences as primary modes to gather information and communicate. Moreover, the Ways of Seeing psychotherapeutic program utilized nonverbal movement analysis, dance, movement, play, and parent-child interactions as tools to assess the parent-infant attachment relationship, as well as for intervention. Tortora (2010) based the approach on the LMA system, which provided an organized method to detail the quality of a nonverbal action, revealing not only each nonverbal action, but also how it is performed.

DMT. The effectiveness of DMT has been described in several papers. By creating nonverbal ways to express experiences too threatening to verbalize (Ambra, 1995), DMT addressed unconscious symptoms and traumas (Lewis, 1996). In a study of five women, Mills and Daniluk (2002) noted DMT enabled childhood sexual abuse survivors to reconnect with their bodies and develop independence and intimacy.

Ambra (1995) interviewed five dance therapists who perceived that DMT helped incest survivors increase their comfort level with exercise and self-awareness, as well as their ability to share and be playful.

Lewis (1996) suggested it was “only through the experience of the power of movement that we will come truly to know and understand” (p. 97). Lewis’ paper explored how dance therapy could treat patients who suffer from traumatic events, among other things. She claimed all early history (including trauma) was stored in the unconscious, adding that expressive arts therapies could access this realm through creative expression.

Comparing dance therapy to the world of imaginative play in childhood, Lewis (1996) claimed it could be an effective approach to address unconscious symptoms. She explained, “The bi-personal field between the patient and the therapist . . . can provide vessels for the transformative experience to the unconscious imaginal realm” (p. 100). The embodied-process orientation of dance therapy allowed prior trauma to be healed and underdeveloped parts of the self to be claimed and integrated. Lewis described a few examples of dance therapy techniques that employed the somatic unconscious and elaborated, as an example, how authentic movement changes over time to reflect recovery from childhood trauma.

Lewis (1996) argued the healing process of abuse requires the patient to make an imaginary return to each abuse setting and occasion. Patients need to take the inner child to a safe place and, as adults, confront the perpetrator in order to respond appropriately and heal. Lewis concluded her paper with personal experiences applying authentic movement to patients who suffered childhood traumas.

Further, Lewis (1996) proposed that expressive therapy in general and DMT in particular can be effective treatments for traumatized individuals. Although the paper offered many compelling anecdotal and personal examples of the application of dance therapy, it failed to account for unsuccessful experiences of applying dance therapy to traumatized patients. Additionally, it did not discuss the patients' embrace of dance therapy (at least in the initial phases).

Mills and Daniluk (2002) described a qualitative research project that examined five women who experienced sexual abuse as children and participated in several DMT sessions. The research included in-depth interviews conducted a few years after the last treatment. Mills and Daniluk fleshed out six common themes—four related to DMT and two to group therapy. Key among the themes were that DMT enabled participants to reconnect with their bodies, gave them permission to play, and developed the senses of spontaneity, struggle, intimacy, and freedom.

A key shortfall of Mills and Daniluk's 2002 study was its lowered credibility due to selection bias. The researchers intentionally studied women who recognized the importance and possible impacts of DMT. These women mentioned they associated potential growth and healing processes with the sessions. In addition, the authors' extension of the research beyond its original scope to other therapeutic fields seemed hasty and lacked substance in evidence. More research and supportive data are crucial to establish this theoretical linkage.

The effectiveness of individual DMT with trauma survivors was also examined in two case studies. Frank (1997) examined a patient who was raped when he was 12 years old, and Gray (2001) studied an adult survivor of torture. In both cases, the authors

claimed the trauma memories were imprinted on the body. Frank asserted only body-directed therapy could be effective in cases of childhood sexual abuse. He claimed the integration of intellectual function and emotional state becomes lost in sexual abuse, when the body's integrity is violated. Emotion and feeling become buried inside the body. In DMT, working with the body, emotion could be expressed and blocks broken. The survivor experiences new body awareness and learns how to release his disgust, accept his body, and later, how the body can give him pleasure.

Frank (1997) followed a weekly treatment regimen for eight months. The patient was 31 years old and had previously been in verbal psychotherapy for two years. The therapeutic goals included feeling safety, setting limits, expressing feelings, and learning how to deal with intimacy, touch, and sexuality. Frank demonstrated four stages through which the patient had to progress during the therapeutic process: (1) feeling safety, in which he learned to gain confidence and set limits; (2) fighting, in which he learned to express feelings of aggression, anger, and grief; (3) intimacy, in which he developed feelings of warmth, dealing with touch and sexuality, and becoming more aware of his body; and (4) parting, which dealt with letting go of the therapy and therapist. After the eight-month regimen, results revealed improved body image and acceptance. The patient could experience his body as strong; enjoy others' touch and lovemaking; own his feelings of anger, grief, and joy; control his aggression; cope with disappointment; and set clear boundaries.

The patient in Gray's (2001) case study benefited from her work with DMT. The resulting conclusions addressed the importance of integrated treatment for torture survivors, the recognition that relationship reconstruction is an important goal, the

importance of working with the survivor's family members, and for the therapist to keep in mind the torture and violation the patient's body had suffered. The approach must integrate body, heart, mind, and spirit. Frank's (1997) and Gray's (2001) case studies represented how DMT could be effective with trauma survivors, but it is important to remember those were only two examples of success.

Ambra (1995) described the effectiveness of DMT with a group of incest survivors. The qualitative research project included interviewing five dance movement therapists from the San Francisco Bay area who specialized in the population of incest survivors. The therapist-participants answered five open-ended questions regarding their backgrounds, theoretical frameworks, approaches used, and issues observed. The most commonly used approaches were Jungian, Gestalt, and Authentic Movement. Results indicated common themes while working with incest survivors: issues with trust, safety, shame, self-esteem, boundaries, body image, sexuality, assertiveness, anger, dissociation grounding, weight sharing, balance, and centering. The research proposed that DMT is effective in helping incest survivors express experiences for which verbal expression is still too threatening. In addition, therapists who participated in this research claimed DMT increased patients' comfort level with exercise and self-awareness, as well as their ability to share and be playful. The small sample size and dependence on DMT perception, however, reduced research credibility and left room for future studies to make more scientific and compelling arguments.

Mirroring. Mirroring is a common therapeutic intervention in psychotherapy. The role of the therapist is to listen (or observe) and reflect back the patient's own words, behaviors, or movements. C. Winnicott (1978) emphasized the role of the mother as a

container (holding) for her baby by mirroring and reflecting back the baby's experiences and feelings. Similarly, Kohut (1985) talked about the therapist's role to mirror and empathize with patients. However, Rogers (1959, 1970) believed the therapists' role was to reflect back in their own words to the patients without self-interpretation based on therapist experience.

Foulkes (1964/1984) and Foulkes and Anthony (1984) described mirroring in a group therapy, in which each participant mirrored, and was mirrored by, others. Other research suggested mirroring strengthened empathy between therapist and client, and among clients in a group (Berrol, 2006; Fraenkel, 1983; Hartshorn et al., 2001; Mills & Daniluk, 2002).

A DMT therapist actively engages in mirroring to enhance somatic countertransference, using it to increase empathic understanding of the client and make more individualized diagnoses and treatment plans (Vulcan, 2009).

McGarry and Russo (2011) proposed that mirroring in DMT enhances understanding of others' emotional intentions through enhanced use of mirror neuron circuitry. That is, to understand others' emotional movements, people activate the neural areas associated with creating these movements. This, in turn, affects the limbic system, enhancing sensations of the emotions associated with the movements. As a result, humans better understand others by feeling these intentions or emotions themselves.

According to Blum (2015), *embodied mirroring* is a nonverbal, experiential, relational, body-based technique that promotes the client's movement towards health, evolution, and "transformation." Blum explained that the therapist:

Intentionally “tries on” the client’s experience in the client’s presence through somatic mirroring to help her better know and understand the client’s internal, unconscious experience. The therapist uses her body-in-representation by physically moving like the client moves to evoke embodied experiences to help the therapist feel and be like the client. (p. 115)

She added that *embodied mirroring* fostered emergence of conscious somatic countertransference through body-based empathic reflection and psycho-physical empathy (Federici-Nebbiosi & Nebbiosi, 2012; Krantz, 2012).

Blum (2015) described the therapist going through three stages in *embodied mirroring*:

- (a) the client mindfully observes himself in his safe therapist mirror,
- (b) the therapist observes evocations of the client in her conscious somatic countertransferences, and (c) a co-reflective, collaboration occurs as the therapist verbalizes and processes her embodied experiences. Resultantly, movement occurs and stuckness unfolds and shifts. (p. 116)

Blum (2015) summarized that when *embodied mirroring* is used mindfully and wisely, it can facilitate transformation in both client and therapist, and a new set of emotional, somatic, spiritual, and cognitive ways show up in the face of previously stuck material. Through the *embodied mirroring* experience, qualities of compassion, care, clarity, calmness, curiosity, courage, creativity, and connectedness emerge within the client and therapist. Finally, with *embodied mirroring*, therapists connect with their deep humility and respect for the clients’ innate resilience to transform and heal with attuned support.

Summary

Trauma can create psychological disturbance in its victims (van der Kolk, 1996). In addition, parents may transmit their trauma and stress to their children (Barocas & Barocas, 1973; Birklein & Sossin, 2006), negatively affecting the parent-child attachment relationship. Interventions found effective in working with trauma patients included group therapy, in which participants benefitted from the support of others in similar situations (Van Puyvelde et al., 2014), and nonverbal interventions. Specifically, DMT and mirroring were found to be effective therapeutic tools in dealing with stress and trauma and improving nonverbal communication between parents and children. The researcher used the findings in these previous studies as a background when creating the DBD model for the current study. The DBD model is group therapy using DMT methods to improve nonverbal communication skills and limit trauma and stress transmission from parent to child.

CHAPTER 3

Method

This research examined the DBD model for working with stressed mothers and children by training dance movement therapists to use the model in six to eight group sessions with mothers and children, and then report their perceptions about the model. In this qualitative study, data were collected using two techniques: in-depth interviews and self-reporting questionnaires. Specifically, I recruited, trained, and interviewed four experienced (two years or more) dance movement therapists who conducted DBD group sessions. In addition, three therapists each completed two questionnaires (after the first and last DBD group therapy sessions) regarding the appropriateness of the mothers' nonverbal behaviors towards their children.

Participants

Participants in this qualitative study were four female Israeli dance therapists with no mental health or trauma history, ranging in age from 30 years to 45 years ($M = 37$) and in experience from two to six years ($M = 4.5$). All participants completed the DBD training and attended weekly Skype sessions in which I guided them on how to follow the DBD model. The Skype series started two weeks before each group began and lasted until the last meeting of the group. In addition, all study participants completed a personal background form (Appendix A) prior to starting.

All participants were graduate-level educated dance therapists who led DBD groups for women and their children aged six months to 20 months. Social workers had referred the mothers to the groups due to their stressful life situations, such being in a low economic or immigrant status, divorce, or single parenthood.

Participant A graduated from Lesley University's Israel extension. She had six years of experience as a dance therapist. Thirty years old at the time of the research, she was born in Russia and moved to Israel when she was eight years old (she considered herself Israeli). She was not married and had no children but lived in an intimate relationship with her partner. Participant A led a DBD group at a public women's social service facility with four women and their children.

Participant B graduated from Seminar Hakibutzim, and had two years of experience as a dance therapist. She was 36 years old and married with two children, aged six years and one year. She also led a DBD group therapy at a social service facility with four women and their children.

Participant C was enrolled at Lesley University's Israel extension and had six years of experience. She was 45 years old and married with three children (ages 16, 10, and 4 years). She led a DBD group therapy at the women's social service facility with five women and their children.

Participant D enrolled at Seminar Hakibutzim with four years of experience. She was 38 years old and married with three children (ages 18, 15, and 3 years). She also led a DBD group therapy at the social services facility. Her first session was with six women and their children. However, due to some technical issues, only one dyad returned to the group; thus, it became an individual therapy.

Recruitment

Participants were recruited through a publication in *Yahat* (an expressive therapist organization in Israel) and through other Israeli therapist groups. Fifteen participants contacted me and submitted resumes. The standard requirements to participate in the

study were having graduated from a DMT program recognized by *Yahat* and at least one year of experience as a dance therapist. In addition, I interviewed each volunteer in a face-to-face meeting, asking them to describe their experiences as dance therapists and the reasons they wished to participate in this research. From these 15, I selected 10 (67%) with experience relevant to the research to attend and complete the DBD training seminar.

The training seminar was built around a three-day (12 hours) session series that included experimental and theoretical materials. In addition, therapists completed an online reading and writing assignment after the seminar but before they started to lead the groups. (See training syllabus at Appendix B).

After completing the DBD training seminar, four therapists (six dropped out due to commute and work-scheduling issues) conducted six to eight DBD sessions with stressed mothers and their infants. The stressed mothers were recruited through social services offices and women's organizations in Israel. The social services offices identified each as a "stressed mother" and provided the reasons for their referrals.

Each group of three participants comprised between three and six dyads. Dyads were essentially pairs of mothers and babies aged 6 months to 20 months. One participant started the group with six dyads, but only one dyad consistently came to the therapy. Thus, this became an individual DBD therapy, which brought different but important information to the research. The social worker who referred mothers to the groups met with the therapists to discuss in detail relevant information regarding each participant. To summarize for the purpose of this study, the applicants in the sessions

were mothers exposed to stressful life situations with a social worker recommendation to attend group therapy.

Confidentiality

Prior to starting the research, the Institutional Review Board (IRB) of Lesley University approved the study (Appendix C), and each therapist participant signed a consent form to participate in the research (Appendix D). The consent form informed the participants of the nature of the research and the purpose and procedures involved in participation. I invited participants to ask, and then provided answers to, any questions or doubts and advised them of the option to leave the study at any time without consequences. Participants were assured full anonymity and confidentiality; only I would know their identities. On the forms, dissertation, and any other publication, their identities appear using only pseudonyms.

Instruments

The therapist participants in this study completed observation files that included information about nonverbal behaviors, their manifestations during the sessions, and their effects on the mother-infant dyads. Additionally, participants answered questionnaires after the first and last sessions based on the observation files. The questionnaire (Appendix E) was used to rate the appropriateness of the mother's nonverbal behaviors towards her child. Nonverbal behavior indicators included eye contact, facial expressions, holding, breathing, distance, rhythm, and vocalization.

Lastly, I interviewed the therapist-participants using semistructured open-ended questions. These interviews were conducted after eight sessions with three of the participants, and after six sessions with the participant who had individual DBD therapy.

Each interview lasted approximately 60 minutes. Participants answered questions concerning the DBD model's ability to improve bonding and reduce anxiety and stress between mothers and babies in relation to the child's developmental stage. Key questions included:

1. Describe the process of the DBD therapy in your own group therapy.
2. Discuss your observation regarding the nonverbal elements (eye contact, facial expression, quality and quantity of touch and holding, distance between mothers and children, the use of space, body tension and body shape, and breathing tempo and rhythm). What did you see? Which kinds of therapeutic intervention did you use? Describe any changes in those elements over time. Please give case examples.
3. Please review each child's developmental stage and explain what did or did not work with respect to specific developmental stages.
4. Discuss the "circle time" phase. What did this phase create for the group therapy? What was effective? What do you think you would do differently? Please give case examples.
5. How did you use the time in the third DBD phase?
6. What do you think overall about the DBD group therapy model? What worked? What do you think needs to be changed?
7. Summarize your thoughts about your accomplishments with the group therapy.
8. Is there any more information you would like to add?

The DBD Model

The DBD model structure included three multi-part phases, as follows.

Phase 1: Free Play

The DBD sessions started with 20 minutes of free play in which mothers and infants came to the playroom and interacted with each other. This time allowed the dance movement therapist to observe interactions between the mothers and their infants.

Tortora (2010) mentioned the importance of observation in therapy, stating, “Observing nonverbal cues . . . is an integral part to determine self-regulatory and dyadic co-regulatory” issues (p. 41). Tortora also noted it is important to observe using “Dyadic Attachment-based, Nonverbal, Communicative, and Expression” (p. 41) or DANCE. In DBD, specific observations include eye contact, facial expression, quality and quantity of touch and holding, distance between mothers and children, use of space, body tension and shape, and breathing tempo and rhythm. Both Tortora and my pilot study (Weissberg, 2013) participants addressed the importance of the use of space, and the quality and frequency of touch and physical contact.

During the free-play time, therapists created nonverbal interactions with each mother-infant pair. While the mothers played with their children, the therapists used empathic reflection to relate back to the mothers what they saw in the child. Similarly, Marian Chace, a founder of DMT in the United States, used empathic reflection and interaction with each client in her group therapy (Chaiklin & Schmans, 1993).

Phase 2: Circle Time

The second phase consisted of 30 minutes of constant circle time. Chace noted the effectiveness of using the circle shape (cited in Chaiklin & Schmans, 1993). Circle

time included dance, movement, and music activities. Every circle time session started and ended with the same *Hello-Goodbye* song. The lyrics included the names of the participants and therapists. Repeating the song and mentioning everybody's name served a key goal: To set a "fostered companionship and established, predictable ritual or structure" (Van Puyvelde et al., 2014, p. 224). Circle time was conducted in the same formation each time, using the same songs and games. Sessions were "predictable and consistent" to gain the participants' trust (Loman, 1998, p. 102).

The structure of these group sessions depended on the age of the participating children. Most groups had children participants 6 months to 12 months old, whereas one group included children aged 12 months to 18 months. The activities and props differed among the groups to fit the children's developmental stages better. Naturally, given this was a group session, ages ranged within each group. The DBD model guided therapists to notice and understand the implications of the age variances. Additionally, therapists attempted to bridge the age differences by choosing activities and props best suited for the group.

The activities during circle time varied and included body interaction, playtime, props, childhood music, and songs. The varying activities during the session created a vital atmosphere. According to Van Puyvelde et al. (2014), such an atmosphere enforces mothers' and infants' liveliness, vitality, and joyfulness. It also affects the mother-infant relationship.

This second phase included major activities such as body interactions among mother, infant, and therapist designed to deepen the dyadic relationship and improve bonding between babies and mothers. Loman (1998) claimed that through body

communication, therapists and children can co-create moment-to-moment movement dialogues. Using body communication, dance movement therapists can develop nonverbal relationships, use movement interventions, and help children process challenging experiences verbally and nonverbally. Tortora (2010) noted:

Body oriented experiences [that] occur through the body and are initially registered at somatic, kinesthetic, and sensorial levels . . . influence all levels of development, shaping how an infant makes sense in the world, . . . perceives her surroundings . . . [and] acts upon her experience. . . . It is through sensing the infant's own body during nonverbal communicative action with others that the infant first begins the dance of relating. . . . The infants and parents begin to develop contingent responses within their nonverbal relational dialogue. Contingent affectively matched or complimentary interactive social exchanges between parents and infants support the development of a strong attachment. . . . Careful attention to specific quality of the communicative exchange reveal if and how each dyadic member is experiencing a contingent or noncontingent response to their individual efforts to create emotional relatedness. (p. 40)

Bodily activities encompass specific movement exercises that combine moving the mothers and babies' body parts and singing songs. These exercises include mothers dancing to the rhythm of the music while holding their infants. The music and vocalization create rhythm and tempo, which assist in creating a sense of synchrony (Tortora, 2010).

The second phase also included spontaneous play. Panksepp (1998) asserted that play improves attachment and social connection. In addition, Ogden, Pain, and Fisher (2006) described the importance of the spontaneity of play. Their approach—SP— included interventions that focused on expanding playful experiences.

Therapeutic interventions during the second phase of the study included mirroring and empathic reflection. Eberhard-Kaechele (2012) noted these interventions in her fourth DMT model, in which therapist-participants could use movement activities to provide empathic reflection to mothers and infants. The therapist or the group of mothers can perform the mirroring. In addition, therapists can use methods to encourage each mother to reflect back and mirror her own infant's movement. Other therapeutic interventions included breathing, assistance in holding and touch, and creating space between mother and infant while the mother described and mirrored what she saw regarding her baby.

During circle time, therapists led the activities and assisted, supported, directed, and used therapeutic intervention with the mothers. They incorporated songs, movement, activities, images, games, and props designed specifically for this model and learned in the training, using the following schedule:

Part 1. First, participants sang the Hello song, and then mothers used gentle physical

touch towards their infants on all body parts, while breathing and humming.

Participants engaged in bodily activity while sitting, with movement and songs and then while using images, movements, and activities. Finally all played movement games and used props such as balls, scarves, and shakers.

Part 2. Infants interacted with a toy while all the children sat close to each other. The researcher selected the toys in advance, not for their individual communicative properties, but to keep the children active and busy, and give mothers time to focus on their own body and movement and to observe their children playing. Mothers breathed, moved, observed, and mirrored what they saw their children doing. The instructions for this phase were specific, and therapists learned them in the training.

Part 3. Mothers stood up and danced while holding their babies. Therapists learned a specific dance during the training. In addition, mothers had a free-time dance.

Part 4. All participants sang the Goodbye song.

Phase 3: Closure

In the third phase, therapists had 10 minutes of open time to create therapeutic interventions and offer support if necessary. Therapists could decide to add what they determined was missing in the session, with the whole group or specific participants. This phase allowed the therapist to decide which therapeutic intervention was needed. The recommendation was to have open time with one dyad each time, and to support the mother's needs with verbal and movement intervention.

Data Analysis

This study examined participants' experiences with the DBD model through in-depth, semistructured interviews. The researcher prepared structured questions to guide the interview but also asked probing questions and used active listening, soliciting participants to clarify or expand their responses.

The process to identify the themes began with an initial review of the interview

data and comparison with the reviewed literature and quantitative data, followed by a second review, slower and in greater depth. Finally, the emergent themes were refined and aggregated into categories.

Themes concerning the dance movement therapists' perceptions regarding the impact or lack of impact of the DBD model on mother-infant bonding; the role of the therapist; and other relevant information about the DBD model emerged from the initial review of participant interview transcripts. I compared and contrasted these themes with the literature reviewed in the previous chapter. In addition, I analyzed quantitative data collected through the questionnaires to compare the appropriateness of the nonverbal behaviors mothers exhibited in the first and last DBD model sessions. This small-sample quantitative data added to and supported findings from the interview transcripts.

While analyzing the results of this study, I used the constructivist approach, which seeks to understand an experience through the participants' viewpoint (Creswell, 2012). According to Bruscia (2005), data related to experiences are best gathered through verbal inquiry such as interviews. Because this study collected data based on the participants' experiences as dance therapists leading the DBD model, I chose to use an interview method.

Forinash (2004) provided guidelines for analyzing data from qualitative research in general and from interviews specifically. The first step was to review the data by reading responses and "jotting down ideas" (p. 133). Following these guidelines, I first read the transcripts of all four interviews, taking notes and writing ideas.

The second step included reading "more slowly and in depth" (Forinash, 2004, p. 134) while staying open to new ideas and not jumping to conclusions. I followed this

second step, reading the interviews in depth and at different times of the day. I then wrote notes, highlighted important quotes, and jotted ideas for themes, but did not yet finalize the analysis.

The last step entailed forming categories and themes. I found themes through similarities in the interview transcripts and started to aggregate them into categories based on the research questions. I reread the themes to determine their relevancy and, if necessary, changed, refined, and finalized the themes. For example, the interview questions guided the therapist to answer questions regarding the structure of the model and the influence of the model on the mothers, children, and their relationships. Those themes are addressed in the Results chapter, incorporating data participants mentioned about the themes.

In addition to the qualitative data from the interview transcripts, I collected quantitative data from the questionnaires. Analysis of these data compared the appropriateness of the nonverbal behavior exhibited by mothers in the first and last DBD sessions. Basic graphs created using Google Docs aided analysis of this data. It is important to note that because the sample for the statistical analysis was small, the quantitative data were used in conjunction with the qualitative data.

CHAPTER 4

Results

The DBD model is a group therapy approach designed to improve bonding between stressed mothers and their infants. As discussed in the Methods chapter, results were obtained from semistructured interviews and questionnaires completed by each of the four therapists who participated after they conducted all sessions with the mothers and children.

Interview Results

Themes concerning therapists' perceptions regarding the DBD model emerged from the interview transcripts. In addition, three therapists answered questionnaires (after leading the first and last DBD sessions) regarding the appropriateness of the mothers' nonverbal behavior in the group. The questionnaire responses (addressed in a subsequent section) added to and supported the interview data analysis. I refined and reduced the categories and determined four emergent themes—Structure, Influence, Therapist's Role, and Value in Group Therapy—and subthemes within those primary themes. Table 1 summarizes the themes, giving key concepts and representative quotes within each subtheme, and the subsequent text discusses these themes and subthemes in more detail.

Table 1. *Emergent Themes, Subthemes, and Representative Concepts/Quotes*

Theme	Subtheme	Representative Concept/Quote
Structure	Timing	Flexibility with timing changes
	Setting	“It allowed mothers and children to feel safe.” (Participant C)
	Consistency	Assists in reducing anxiety and creating a safe environment
	Transitions	Recruitment/pregroup transition, transition to individual therapy, and signaling transitions
	Contracts	“This commitment was critical!” (Participant C) vs. “We couldn’t set up a ‘contract’ that set up a commitment” (Participant B).
Influence	Nonverbal behavior	Eye contact, distance, holding, facial expression and body adjustment, rhythm
	Opportunities for change and growth	To recover from pain and grow; gain confidence and feel free; become more active; learn to let go; develop mutuality and intimacy; bond better; focus on and listen to the children; change the children’s behaviors; engage in quality time; and persist in the group
	Mothers’ anxiety and embarrassment	“As the meetings proceeded, the setting became more familiar and the participants felt more comfortable.” (Participant B)
Therapist’s Role	Observing	“At the first phase of the observation, I was more active than I would be in a group.” (Participant D)
	Listening and mirroring	“My intervention was to listen, sometimes mirror . . . but not interpret their stories.” (Participant A)
	Creating safe space	“Where they would not be judged, where they could be accepted like they are, with their children.” (Participant B)
	Setting boundaries	“I set boundaries like [the mothers] needed to set for their children.” (Participant C)
	Body movement intervention	“I tried to widen their movement qualities.” (Participant C)
	Touch intervention	“I am not sure if it is wrong generally, but it wasn’t right for me. I have issues with touch.” (Participant B)
Value in Group Therapy	Self-learning	“Each mother could see her mothering style. . . . Mothers could compare their motherhood styling to others.” (Participant A)
	Accelerated progress	Especially stability
	Relaxation, vitality, and happiness	“It allowed mothers . . . to be in contact with their own childlike characteristics.” (Participant A)

Theme 1: Structure

In discussing the model's structure, participants touched on several subthemes, including timing, setting, consistency, transitions, and contracts. Overall, participants noted the structure was very effective.

Timing. Participants mentioned some changes they would create in the timing. For example, some stated they might make the first phase shorter or use the third phase to extend the circle time phase, mentioning the important of being flexible with timing changes. However, other participants thought the timing was just right.

Generally, participants discussed that Phase 1 needed to be shorter. Participant A believed allowing time for this phase was important but stated, "On our first meeting, I felt these 20 minutes were too long. The time created anxiety for the mothers. I wanted to reduce this time for the next session, but didn't do it after all." Participant A wanted to invite mothers to share other issues the group did not have time to deal with:

It was also time to build trust among the mothers themselves and me. . . . I also think, since it invited those emotional parts I might not have time to deal with, it would be more reasonable to give this section a shorter time.

Participant D concurred: "I would change the first phase—make it shorter."

According to participants, timing of some parts in this model was appropriate. For example, Participant C thought Phase 2, Part 1 was just right: "The first part of Phase 2, circle time, was very structured. It was 10 minutes long. . . . I kept the setting and the timing. I feel it was the right timing."

However, Participant D thought this part needed to be longer: "I would give more time for circle time, especially the song and play part. I extended the whole circle time

phase.” Nevertheless, Participant D felt Phase 2, Part 4 “timing was right for everyone, and they learned it.”

Setting. Participants talked about the importance of keeping and following the setting. For example, Participant A stated, “I really think we need to make sure we are following the setting and the structure. The structure needed to be consistent.”

According to Participant C:

For the eight sessions, we did not need to change any of the settings or songs. If we had extended the group to around 20 meetings or more, I guess it would be necessary so that it would not be boring, and since the children are growing.

Participant C also emphasized the important of maintaining the setting: “I think the setting and the structure were extremely important. It allowed mothers and children to feel safe. It allowed observation of changes which would be very hard to see in open space.”

Consistency. Three participants talked about the importance of consistency in the DBD model, which sometimes can assist in reducing anxiety and creating a safe environment for mothers and children. Participant A mentioned, “I really think we need to make sure we are following the setting and the structure. The structure needs to be consistent.” Participant B agreed: “The setting and structure were consistent. It was important.” Additionally, Participant C addressed the consistency of the session:

The mothers were interested to know if, in follow-up classes, etcetera, the songs and flow were going to remain the same. This brought up the issue

of the importance of routine—how it brings anticipation, preparation, etcetera, which leads to confidence and comfort.

Participants talked about circle time, which was a consistent and structured part of the model. Children and mothers learned and recognized this part. The consistency created feelings of being free and safe. For example, Participant A noted, “One of the girls in my group learned the setting and the movement. She recognized and expected movements to come in their specific order.” Participant B described a similar situation: “She [a child] remembered the setting and the way it was organized. She knew what came next in each song or phase. . . . It allowed her to feel freer.”

Participant C also discussed consistency in circle time as creating feelings of safety. She stated, “The children and mothers learned the routine. When do we have to take away the scarfs? Which stage comes after? It created safety in our group.” She also tried to create consistency in the first and open phase by maintaining two specific songs:

I usually put on two specific songs and then music for the background, something not heavy. The [length of the] two songs were the time to organize for gathering. The two songs created, for the parents and children, consistency in this open phase.

Then she described another example (in Phase 1) in which consistency assisted the baby to learn the routine and feel safe:

One time, a mother came late, but her child participated in the group. He sat with everyone, didn't feel anxiety, and was very active. He recognized the group participants. His mom joined us, and he kept his focus on the group.

Participant C mentioned the important of having the children in similar developmental stages and talked about gender differences:

It was good that the age group was mostly the same. I did not notice a lot of differences in this aspect. I did notice a gender difference—boys were more likely to play, and girls focused more on their mothers. For example, there was a song about blocks to build. The boys played with the cubes while the girls focused on their mothers.

Discussing her group in the first session, Participant D stated, “I could see the differences in age, mother abilities, and attachment relationship,” and added she had difficulty dealing with mothers of different statuses:

I did not have time to coordinate the group and to adjust the activities to each mother. I was one therapist and I tried to support everyone. But I believe I should focus on the mothers who were low with their communication skills. I could not really support everyone.

Transitions. Participants discussed transitioning through the model. Specifically, they spoke of transitions in terms of pregroup recruitment as well as adjusting the model for individual therapy. Further, they addressed the importance of signaling transitions within the dyad.

Recruitment and pregroup transition. Participant C talked about preparing for the group and adding parents’ meetings to the basic model:

1. There is a need for pregroup conditions, and once you agree to them, this is part of your individual contract. In an ideal world, the therapist would interview potential participants for the group.

2. I think if the therapist does the recruitment with the support of the social worker, it will be more effective. I would interview potential participants and let them know about the terms before starting the group.

3. I would also do first or second individual meetings with each dyad. In this meeting, I will do the personal contact. Then, I would do a parents' meeting and then start the group. The thing is . . . it is very difficult to send messages to the mothers while the children are in the room. . . . I believe that a parents' meeting will develop mentalization through experience. They [the mothers] need to be unoccupied for this. . . . Of course, this is a fantasy and not a reality. It would be very difficult for parents to find a babysitter. But this would be the ideal group.

4. Another thing I would add is a parents-only meeting. . . . My ideal model would be 12 meetings that start and end with parents-only meetings, and another three to four in the middle. The subject for those meeting would be led by the therapist . . . like eye contact and its value, interpretation of the child, feelings that arose from dancing with the children, and more.

Transition to individual therapy. Participant D, who worked this model mostly with one dyad, talked about adjusting the model to individual therapy through the various phases.

[Phase 1] Being more active: At the first phase of the observation, I was more active than I would be in a group.

[Phase 2] Changing between the second part and the third part of this phase: I did follow the model . . . [but] I changed between the second part of Phase 2 to the third part of Phase 2. I needed to focus for a longer time on dyad communication with this specific mother. After that, I switched to focus on the mother. . . . I felt that with this specific mother, I should first take the time with activities with the child and only after we finished could we focus on her and assist her to be more grounded, to release, and let go. I also left some time to talk.

[Overall] This model was very good for this specific mother.

Signaling transitions. The model included suggestions for some transitions.

However, participants added the importance of *signaling* the transition in many situations. Participant A noted, “This is very important for me to point out the transitions.” She gave examples of the methods she used to sign the transition between different parts of the model:

[Transition at circle time] For example, how do we separate from the movement and music accessories? Sometimes children had hard a time to separate. I tried to do it gradually. I had some opportunities to do it in this part, since there were different accessories to different songs.

[Transition between Phase 1 and 2] I used a gong to point out that we were moving to our next phase.

[Transition at Phase 2, Part 2] The transition from being focused on the baby was not very natural.

[Transition at Phase 2, Part 3] Then there was the transition, going back to the children and coming up to Part 3 of the second phase, where we dance with the children. I counted to five to allow time to get back to themselves and stand up.

Similarly, Participant B described her way to signal transitions:

The bell signaled the first transition, from Phase 1 to 2. It gathered all the mothers into the circle. Mothers could get ready for the structure phase.

[Transition in Phase 2 circle time, between Parts 1 and 2] From the circle of song to the mothers' work on themselves was also very clear. It was signaled by the last song with the bubbles. However, since it was not very easy for the mothers to focus on themselves, the transition was harder.

The children could understand they needed to go after the bubble song.

They understood the signal. But the mothers needed more time to organize for this part.

The transition to standing up was also very clear. I would tell the mothers, "Soon we will stand up, let's count to five." It assisted them to get organized and get ready to stand. Here it was not always clear to the children.

Contracts. Participant C talked about the importance of having a contract with the mothers in the group because she thought it was important that they commit to the group:

I would like now to discuss again the therapeutic contact. I created a contract with the mothers on the first meeting. However, the real contract

was made on our fifth meeting. I told them that if they would like to keep the group, they would need to obligate to come to the group. . . . It was an educational statement. This was the message I wanted to implement. The setting was a great setting, but the therapy was the essence. . . . This commitment was critical!

However, Participant B did not think she could create a contract in her group:

There's something to be said about the fact that, unlike similar situations, the women who joined this group were part of a larger group that used the . . . facility [where] we were located. Unlike other groups, the women didn't choose to come to this session per se. We couldn't set up a "contract" that set up a commitment.

Theme 2: Influence

Participants addressed the model's influence, highlighting the subthemes of nonverbal behaviors, opportunities for change and growth, and mothers' anxiety and embarrassment.

Nonverbal behavior. One DBD model goal was to assist mothers to bond better with their children by improving their nonverbal communication with their children and creating appropriate communication. Participants related changes that occurred in eye contact, distance, holding, body adjustment, and rhythm.

Eye contact. Participant A talked about improvement in mothers' eye contact, stating, "One of the most important nonverbal elements I saw was the eye contact. It became more present and more active during the time, especially for the mothers." She observed three situations with mother eye contact: (1) improving stable eye contact as the

model proceeded, (2) creating too much eye contact, and (3) avoiding eye contact, which influenced the child, who did not create eye contact. Participant A explained:

The first dyad (Dyad A) had more stable eye contact, which also improved with time. [In] the second dyad (Dyad B), the mother [at first] couldn't stop creating eye contact. She looked at her child all the time and couldn't stop. The child was very active. It took a while, but [the mother] learned a little bit to release her eye contact and focus less on her child's every movement. The third dyad (Dyad C) was not very connected with eye contact. The child was exploring the environment and didn't look to his mother for eye contact. [The] mother was very disconnected in the beginning but in time, she started to try more often to create eye contact. He [the child] still didn't look for her eye contact—he was afraid he wouldn't find it. But he was very happy to see that she was looking and trying to create eye contact with him.

Participant B likewise described eye contact: “The element that I mostly saw the change was in distance. In addition, eye contact and rhythm also had progress.”

Distance. Participants described improvement in the way mothers created distance from their children as the sessions went forward. Participant A described how hard it was for the mother in Dyad B to create distance from her child, stating, “The child would have liked to walk away from his mother and keep the distance, but in the beginning, it was hard for [the mother] to release him.” Then Participant A saw improvement: “In the two last sessions, she allowed [the child] more often to create distance from her.”

Participant A described a different situation with Dyad C, in which the mother had a hard time feeling mentally close to her baby even though he was physically close to her:

This was a smaller baby, who still couldn't go far away from his mother. He was crawling; therefore, he was closer to his mother physically. Some days, she tried to keep him closer to her; some days, they were like two "parallel lines." He was usually next to her, but not on her hand, not touching. There was still a lot of work [to be done] there.

Participant A described improvement in the ability of the child in Dyad A to create distance: "The girl created different distances. In the beginning, she was very shy and didn't walk away from her mother. In time, the distance became wider. She got more confidence."

Participant B highlighted changes that accrued in the distance element, noting the dyads that improved most in distance were the dyads with secure attachment:

Dyad 1, for example, was mostly a secure attachment. . . . She [the child] was very attached to her mother. In the first meetings, she had a higher stress level with the other children. She used to come closer to Mom and put her head on her. It happened in the first three meeting at least. In the last sessions, she expanded her distance from Mom. She was exploring the room more often.

Participant A addressed similar changes in the distance between mothers:

Another important subject that arose in this part was the [mothers'] distance from the group: How do I act as a mother in a group with other

mothers? What do I do when the child cries? What was the distance from the group? How do I act in front of the group? How did the group influence my instinct?

Holding. Participant A gave examples of improvement with the way mothers hold their children:

In the beginning, the holding was very tight and the child was always with his face towards her. In time, she had more opportunities . . . she let him look at the circle.

[Dyad C] The mother always held him with his face outside, while his back was in front of her. One time, he didn't feel well, and then suddenly she put his face towards her face. I'm not sure it was because something was improved or [whether] it was the illness.

Body adjustment. Participants did not mention improvement in the body adjustment element, possibly because it was unnecessary. For example, Participant A noted the mothers' body adjustment did not need improvement even in the beginning: "The mothers did not create any extreme situation. They did not sit with their back towards their babies."

Rhythm. Participants discussed the importance of creating a unified rhythm for the group. Participant A noted, "The first part of the second phase—singing—was the most important thing, while sometimes the children would cooperate and sometimes not. Finding the same rhythm was very important but could not always be achieved."

Participant B gave example of changes in the rhythm element with one dyad: "The vocalization was suitable and the rhythm created harmony. There was synchronization between the mother and her daughter."

Participant A also stated the importance of creating a unified rhythm among the mothers themselves:

I tried to create a unified rhythm for the group and not [just] between mothers and children. It was important for all mothers to be part of the group. The belonging was important. I didn't see it towards the child, but definitely towards the group.

In one of our meetings, mothers had their own rhythm, while children had a different rhythm. I tried to help them get closer to something more unified. This was like a game, and this was a therapeutic intervention.

Participant A further mentioned the importance of the Phase 2, Part 3 because it created a unified rhythm: "The themes that arose in this part were really basic: coming close or further away; changing weight with one rhythm. I believe this part was important because they unified rhythm."

Opportunities for change and growth. Participants highlighted the opportunities the DBD model created for change and growth in the mothers, the children, and their relationships. These included opportunities to recover from pain and to grow, gain confidence and feel free, become more active, learn to let go, develop mutuality and intimacy, bond better, focus on and listen to the children, change the children's behavior, engage in quality time, and persist in the group.

To recover from pain and to grow. Participant A mentioned circle time and gave an example of creating an opportunity to recover for one mother:

There was one mother in my group, she was in pain. This mother enjoyed the time in this phase more than her child [did]. This phase was definitely

for her. She sang out loud, clapped her hands. She thought she was there observing her child, but mostly she had fun. This was an opportunity to recover [from] some of her pain and [to] grow.

To gain confidence and feel free. As an example of creating change, Participant A discussed circle time: “One of the girls in my group learned the setting and the movement. She recognized and expected movements to come in their specific order.”

Participant B described a similar situation and explained how it assisted the child in gaining confidence and feeling free:

The child herself gained a lot from the group. . . . In the last sessions, she expanded her distance from Mom. She was exploring the room more often. In addition, she remembered the setting and the way it was organized. She knew what came next in each song or phase. It allowed her to feel freer.

To become more active. Participant B gave an example of changes a mother created while the group was processing in the first phase:

The babies started to explore different toys on the carpet, [and the] mothers sat down. In our last session, one mother then stood and moved onto the carpet to play with her son. This was the first and only time that mother did not stay seated with the other mothers.

To learn to let go. Participant B talked about a mother’s progress: Her mother was also progressing in the relationship, even though it was slower progress. In the beginning, she had to have her daughter close by.

[Ultimately,] she was more able to let go and allowed her daughter to explore the environment.

Participant C also gave examples of the children learning to let go:

In the beginning, they wouldn't let go of their moms. We worked on some exercises [for] the moms' behavior to encourage "letting go": having the babies face them rather than the circle, sitting with open legs, hugging but slowly unlocking the hug, as well as other things. Some of the babies, from time to time, had to lean back so they could feel their moms again, but when we changed positions—[from] the baby sitting on [the mother] to the baby sitting within her legs—this encouraged the babies to explore more, as the moms' were signaling they trusted their babies and this forum to let go.

To develop mutuality and intimacy. Participant B addressed improvement in a mother-child relationship over the course of the group therapy:

The relationship had more mutuality. They played together more often. The girl brought a toy to share and played with her mother. The mother felt free to observe other children and mothers. This dyad had so much progress. When I think about them, it really makes me feel good and excited.

Participant B mentioned accessories that assisted in creating intimacy for mothers and children. For example, there was an activity with a bell, wherein the mother moved the bell up and the mother and child looked at and focused on the same spot. Another example was the use of bubbles. Again, the mother was active, and her child was

focused on and curious about what the mother was leading. For a long time, mother and child created intimacy together.

To bond better. Participants mentioned the potential of circle time to create better communication between mothers and babies. Participant A noted the playfulness circle time allowed:

This phase also allowed exposure and widening of communication with the child. It gave another way to play with the child. Mother could more easily be playful in this phase. The children could internalize this playful situation of their mother with them.

Participant B discussed widening the mothers' nonverbal behaviors towards their children: "The other three dyads could create better communication at this part. There was more eye contact, more focus together. Mothers had active roles in the songs to lead the movement." Participant B also talked about communication in the circle time phase:

I enjoyed leading this part. I think it was very significant for the mothers; they could join me very easily. Some of the songs were familiar to them. The children also enjoyed this time. They were very curious and focused on what's going on in this part. This part felt to me like "magic in the room," and everyone could feel it. In this part, mothers were much more active. Each mother tried to create contact with her child. Each child came closer to mother. It gave new quality to the setting. The songs were different, with different accessories. This part had a variety of things. The space was different. The repetitiveness assisted participants to feel more relaxed and secured. At these 10 magical minutes, some of the nonverbal

elements were different in a positive way. There was more connection between the mother and her child.

To focus on and listen to the child. Participant C gave another example of change that appeared in the mother's behavior towards her child:

One mom was constantly engaged in wiping her daughter's nose... Every baby hates it. . . This was just out of context. The mom was constantly occupied in fixing her child's hair or wiping her nose. She stopped showing up in the very last sessions, but in the five or six sessions we did together, it was obvious she "released this position." She stopped constantly doing these things, which allowed her child to "let go" as well. This was clear through the exercise with the scarfs. Some moms allowed and let the babies play with the scarfs in a free form—doing whatever they wanted. That mom couldn't overcome the distinction between her own needs [to clean the nose, etc.] and her child's needs—not being comfortable with it.

To change the children's behavior. Participant C talked about the relationship and progress with one child in her group:

Over a few sessions, the baby started crawling and moved to sit closer to me [the therapist-participant]. I didn't know how the mom was going to react to that. When we did the closing dance, which wraps up every session—a song called, "Every hour a kiss, every hour a hug"—the baby reached out her hands towards me. Her mom was amazed and said this had never happened before. It wasn't because of me—[the child was like

that] even with her family. I think this was the result of “freedom” in general and the sense of “okay” that was present in the sessions.

Participant D identified examples of changes that appeared in the child in the individual dyad:

[1.] The child learned to stay on his back and enjoy it. In the second phase, we found out that it was very hard for the child to stay on his back. He could not enjoy and relax on his back. He needed to hold himself. I was active in assisting him to be on his back by playing with him at that time or massaging him. In the beginning, he cried a lot. I encouraged [the mother] to keep trying at home. When we progressed with the meetings, he could enjoy being on his back and play.

[2.] Joy and laughter: When [the mother] started to use facial expressions towards him, he was laughing. He had a really good time. He tried to find it also with me.

[3.] Motor skills: During our sessions, he made progress. He started to crawl and stand.

To engage in quality time. Participant C addressed the value of mothers spending pure quality time with their children:

[The mothers] mentioned they rarely had opportunities to spend time just dancing, playing around freely, etcetera with their children. It was actually very freeing and supportive for the moms. They started to feel that not only was this quality time for them with the children, but also quality time for themselves.

To persist in the group. Participant C stated, “I think the main accomplishment was the mothers’ persistence in coming to the group every week for an hour with their child and having quality time with them. The relationship in the ‘here and now’ was very important.” Participant D also believed the mothers’ persistence was important, explaining, “Even the fact this mother decided to recruit herself for her child and for herself—this was significant by itself.” Then Participant D added, “It was exciting to see how she was ready to go for another therapeutic session.” This persistence seemed to have the corollary effect of improving relationships with the other mothers, according to Participant B’s example:

In another dyad I can talk about, the mother was very disconnected from her child. She sat really close to the walls, didn’t move, didn’t create any eye contact. This was at the beginning. In our last session, she changed her place and sat much closer to the other mothers. She started to communicate more. Her communication with her son did not improve so much, but with the group and me, there was major progress.

Mothers’ anxiety and embarrassment. Three participants talked about anxiety and embarrassment present during some parts of the sessions. For example, Participant A remarked that the length of the first phase might create anxiety. Participant B also described anxiety that reduced over time, stating, “In the beginning, mothers and babies looked anxious. As the meetings proceeded, the setting became more familiar and the participants felt more comfortable.” In relation to the first phase, Participant B raised the issue of therapists’ anxiety, and Participant C talked about her actions to reduce the mothers’ anxiety in advance:

I thought it would be good to bring some cake and coffee, but the place didn't allow coffee because of safety—hot water—so I just brought cookies. Both mothers and children ate the cookies. It assisted in reducing anxiety for the first phase.

Another phase participants mentioned as stimulating anxiety and embarrassment was Part 2 in circle time, when mothers were asked to focus on themselves. For example, Participant A described, “In the beginning, there was a lot of embarrassment. The mothers had a hard time focusing on themselves rather than the babies. I remember the looks on the mothers’ faces—it was very weird for them.” Participant B also discussed anxiety in Part 2:

It was very hard for mothers to focus on themselves while their children were with them. . . . The mothers’ focus on their [own] bodies created anxiety. . . . I guess the mothers had anxiety relating to this part of the model or maybe they didn’t feel comfortable.

Participant C related to circle time and mentioned, “Sometimes, the mothers were embarrassed to sing those songs. . . Initially, it felt that some of the mothers were embarrassed to move, to ‘expose’ themselves in front of others.”

Theme 3: Therapist’s Role

Participants described their therapeutic interventions during the sessions and discussed several subthemes of their role as therapist, including observing, listening and mirroring, creating safe space, setting boundaries, and using body movement and touch as interventions.

Observing. Participant A described observation as a therapeutic intervention, stating, “This [first] phase allowed me more time for observation. . . . I was present there, observing, and I was not doing any verbal or movement intervention.

Participant B further explained:

In the beginning, I was mostly doing observation. Mothers might need me to be more active and present. However, I felt the need to observe. . . . I was observing in this [first] phase. I tried to learn what could help create connections between mother and child.

However, Participant D talked about her need to be more active in individual therapy than when leading a group. She gave some examples:

[1.] At the first phase of the observation, I was more active than I would be in a group.

[2.] I directed and assisted the mother to play with her child.

[3.] I was active in assisting him [the child] to be on his back. . . . On the first meeting, I would be the one to put him on his back. Later, I would use a doll to show [his mother] how to do it.

[4.] I taught [the mother] to play with her facial mimicry and voice. I encouraged her to be playful while he [the child] was on his back.

Listening and mirroring. Participant A gave some examples of her role “to be there, listen, and mirror” during the first phase:

[1.] My intervention was to listen, sometimes mirror, for example saying, “This is very concerning,” but not interpreting their stories... My role at this phase was to encourage and strengthen the interaction between

mothers and children by relating verbally to the mother-baby interaction. For example, one baby, “T” (Dyad C), really liked the shaker. When the mother tried to take the shaker from the baby, I would say, “Shakers are so fun. T likes the shakers very much.”

[2.] If the mother tried to take the shaker from the baby, I might say, “T likes the shakers, and Mommy likes the shakers as well.” This is *mentalization*.

Participant B also talked about mirroring as a therapeutic intervention tool she used: “In the last sessions, I got more confidence and created some interventions, for example, mirroring. I was also more verbal. I needed less to observe and felt freer to mirror.”

Participant D addressed being active while modeling and mirroring in her individual DBD therapy:

[The mother] could just sit and let him [the child] be without creating eye contact. If he were crying, she would hold him in her arms but wouldn’t talk to him, wouldn’t ask him how he felt. I mirrored to her the way I would act towards him. Later on, I encouraged her to talk with him. I mirrored to her that it would be good if she could play and be active with him. I mirrored other ways to be with her child.

Creating safe space. As Participant B explained, “For me it was important to allow mothers and children a safe and secure space for exploration. This space would be a space where they would not be judged, where they could be accepted like they are, with their children.” Participant C also talked about this safe space:

I would like to mention that the therapeutic intervention was “holding the group,” the therapist presence, and the therapeutic space... I think mostly I would like to mention the importance that it would not be another “Gymboree” activity. The activity can be just like any other mommy-and-me classes; however, the difference is the therapeutic understanding, the holding.

Participant A gave an example of assisting mothers to create changes in this nonverbal element:

I try to find out which rhythm was the correct one for each dyad. I tried to give attention to each dyad. For example, one time I felt like each dyad needed to get some strengthen from me, so I came to each dyad and wrapped them with a scarf. . . . In one of our meeting, the mothers had their own rhythm, while the children had a different rhythm. I tried to help them get closer to something more unified. This was like a game and this was a therapeutic intervention.

The way the structure is built is to encourage mothers to relate to eye contact, physical distance from mother to child, opening of the body, tension in the body, [and] breathing. There was a kind of “manipulation” of the mother’s body.

Participant B also talked about assisting the communication: “In the last three sessions, I added the ‘tunnel’ [a toy the child could crawl inside]. I thought it could assist in creating connections between mothers and babies. In addition, it was right for the age of the children.”

Participant D discussed her individual therapy and the way she assisted the mother to communicate actively with her child:

I directed and assisted the mother to play with her child. This mother was very monotonic and passive. I helped her create more facial mimicry while interacting with her child. She was never excited about this act. She did not smile at him. She did not create any direct communication with him. I tried to show her how to create communication by modeling how I connected with her child. I also encouraged her to do activities with him.

Setting boundaries. Participant C talked about the importance of setting boundaries and creating a contract with the mothers as part of it:

I wanted to have some commitment from the group to make sure this is something that would be interesting to all. . . . This commitment was critical! Over time, when some mothers started to skip sessions, I told them this [therapy] would not continue unless they met their commitment. The group piece of it came to life when they created this “whatsapp” group to communicate, and the community piece of it helped bring everyone back together so we could continue with the sessions. . . . It was important for me to set boundaries and that [the mothers] would have to make a commitment for the session. . . . I set boundaries like they needed to set for their children.

Body movement intervention. Participant C used movement intervention, describing, “There was a conversation that I led, follow by movement. I told them to

notice the way they sit. My instruction allowed them to focus on their own needs.”

Similarly, Participant B addressed widening the mothers’ movement repertoire, stating, “I tried to widen their movement qualities.”

Touch intervention. The DBD model included touch interventions most participants used in their group therapy and found useful. However, Participant B mentioned it was not right for her and she excluded it in her group therapy:

I would like to make a point about touch. The model directs therapists to lead mothers to create touching in a playful way with song and music. I didn’t do it. It was wrong for me. Since touch was part of the model, I thought it would be important to mention this. I felt like this is manipulation of another’s body—”Put your hand on your head,” for example—it was too hard for me. I am not sure if it is wrong generally, but it wasn’t right for me. I have issues with touch. I felt uncomfortable.

Theme 4: Value in Group Therapy

Study participants addressed the value of the group therapy. They mentioned benefits to the mothers, which became the subthemes of self-learning; accelerated progress; and relaxation, vitality, and happiness.

Self-learning. Participant A specified the value of self-learning while in a group and seeing others in the same situation:

When mothers gained trust in the group and could see how they act in the group, what would be their role? Each mother could see her mothering style: having a hard time to separate from her baby; having a hard time to be with the baby at the group; trying to be active all the time; being more

passive with the baby. Mothers could compare their motherhood styling to others.

Another important subject that arose in this part was the distance from the group: How do I act as a mother in a group with other mothers? What do I do when the child cries? What was the distance from the group? How do I act in front of the group? How did the group influence my instinct to do it?

Participant D talked about mothers gaining new skills that could assist them in the future:

[The mother] gained many new skills on how to play with her child, another way she could be with her child. She mentioned she kept doing those activities at home. She found a new way to be in this dyad. She could be more relaxed. She was very anxious as a mother. It was springtime and he [the child] still wore a winter coat. She was anxious and her knowledge was limited. After the meetings, she had another idea of how to be and enjoy her time with her child

Participant C valued mothers being with others, explaining, “Being with others in a similar situation, being with themselves in that setting, was highly rewarding to them.”

She added that the group therapy provoked the mothers’ deeper thinking:

A few questions that came from the mothers were around, “What kind of mother am I?” [or] “Do I spend enough time with my child?” etcetera.

The fact that these sessions provoked this thinking was amazing by itself. . . . It initiated “thinking” rather than “doing.”

Accelerated progress. Participant B talked about a mother changing in relation to the group, stating, “Her communication with her son didn’t improve so much, but with the group and me there was a major progress.” Participant A talked about assisting mothers to find their own stability:

I believe as a therapist that what was really important was to assist the mothers to feel more grounded, to feel their own center. [A child] might be too heavy [for the mother] to pick [up easily]. There was a need to organize to be able to do it. It was very important to be conscious of our own actions, to teach mothers to create their stability. . . . While standing, I tried to assist them to be more grounded and centered.

Relaxation, vitality, and happiness. Participant A explained the value of circle time: “It allowed mothers gradually to feel relieved, and to be in contact with their own childlike characteristics. . . . This phase brought vitality.”

Participant C stated, “As the therapy sessions went on and on, there was more happiness in our group.” Participant D mentioned the child also gaining happiness:

As for the child, he gained happiness in his life. He learned to laugh and play while on his back. His mother kept exercising with him to be on his back at home. She mentioned that he started to like being on his back. It was very important for both of them.

Summary: Interview Results

The main themes of structure, influence, therapist’s role, and value in group therapy—and multiple related subthemes—emerged from analysis of the interviews subsequent to participants applying the DBD model in their practices. Overall, the

participants highlighted positive aspects and benefits of the model as well as their recommendations and adaptations.

Questionnaire Results

In addition to the open interviews, participants answered a questionnaire after the first and last sessions based on their observations and notes of behaviors during the sessions. The questionnaire (Appendix E) was used to rate the appropriateness of the mothers' nonverbal behavior towards her child. Nonverbal behavior indicators included eye contact, facial expressions, holding, breathing, distance, and rhythm.

The data were based on questionnaires three participants answered. Because Participant D had only one patient in her last session, her responses for the individual (i.e., not group) therapy are excluded from this discussion. Each participant had four or five mothers in her group. Although this sample is small for quantitative analysis, the questionnaire responses regarding nonverbal behaviors between mothers and their children in the first and last groups support, and are supported by, the qualitative responses.

The following data, presented by participant, show some mothers behaved more appropriately towards their children at the end of the group, especially in terms of distance, eye contact, holding, and facial expressions. Most participants did not rate *breathing*. The changes in the mothers' behavior could relate to the DBD group therapy; however many other factors could affect it. Unfortunately, the collective data is too small to provide generalizable quantitative indicators. Nevertheless, the data mirror results from the interview section.

Participant A

A comparison of Participant A's before and after questionnaires showed improvement in the appropriateness of the mothers' nonverbal behavior in terms of eye contact, facial expression, holding, and distance; no improvement in rhythm; and did not report on breathing (Figure 1).

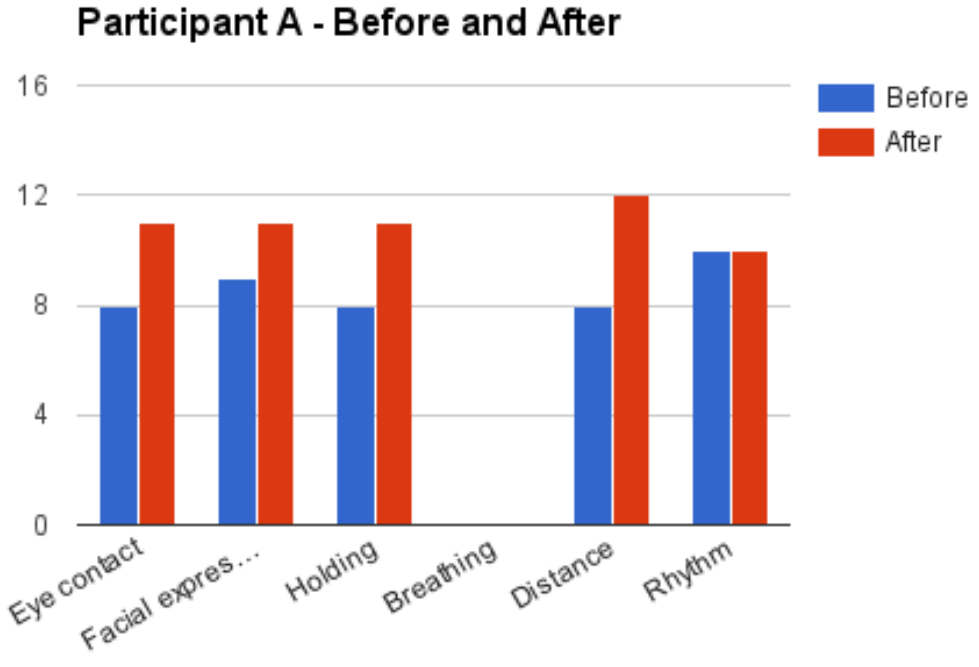


Figure 1. Comparison of Participant A-reported behaviors before and after DBD sessions

Participant B

Participant B reported improvement in the appropriateness of the nonverbal behaviors eye contact, facial expression, holding, distance, and rhythm (Figure 2). She did not comment about breathing.

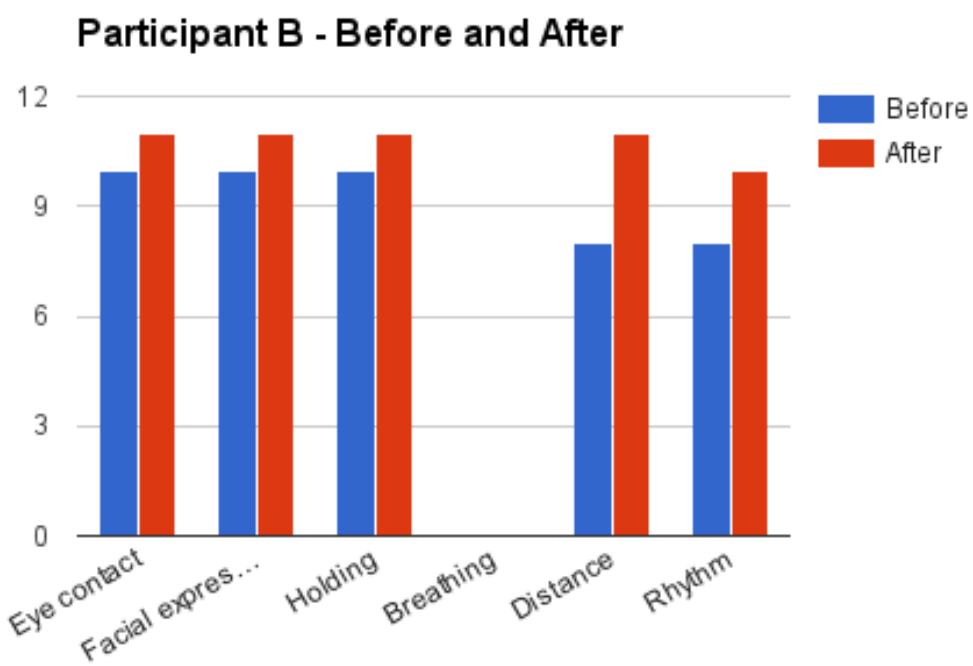


Figure 2. Comparison of Participant B-reported behaviors before and after DBD sessions

Participant C

Participant C reported improved appropriateness in all nonverbal behaviors tested, including eye contact, facial expression, holding, distance, breathing, and rhythm (Figure 3).

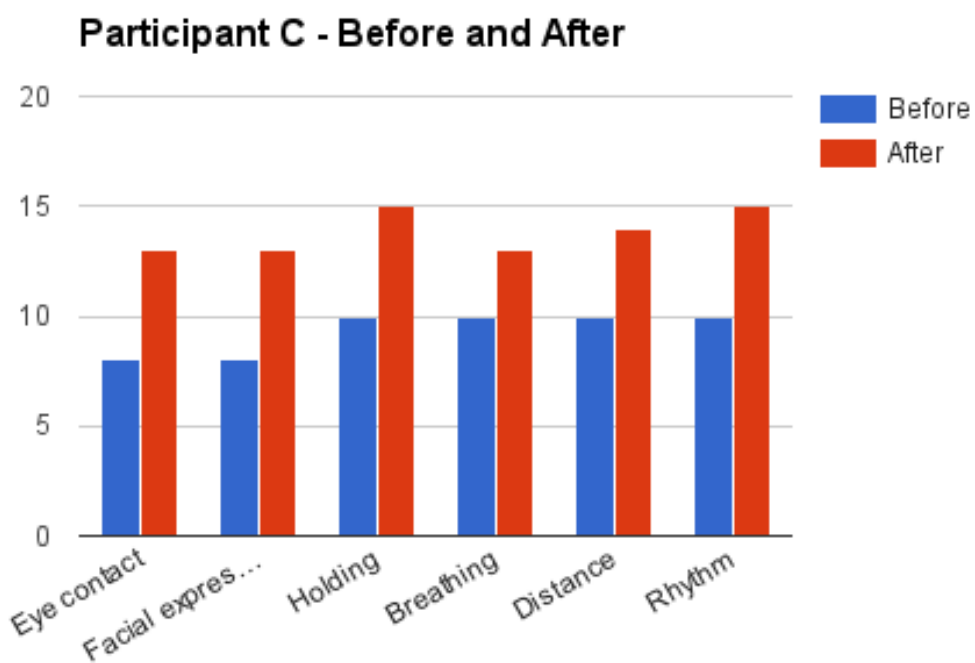


Figure 3. Comparison of Participant C-reported behaviors before and after DBD sessions

CHAPTER 5

Discussion

This study aimed to investigate the feasibility of the DBD model as a body-based intervention to address the issue of mothers' stress, attunement, and nonverbal communication skills. The DBD model structure encompassed Phase 1, Free Play; Phase 2, Circle Time; and Phase 3, Closure. The majority of participant comments derived from circle time. In the first part of this phase, the therapists led the activities and assisted, supported, directed, and used therapeutic intervention with the mothers. They incorporated songs, movement, activities, images, games, and props designed specifically for this model and learned in the training. In the second phase, the infants interacted with a toy while all the children sat close to each other. The mothers breathed, moved, observed, and mirrored what they saw their children doing. Next, the mothers stood up and danced while holding their babies (the therapists had learned a specific dance during the training). In the final part, all participants sang the Goodbye song.

Discussion of the Results

Four main themes emerged from the results of this research on the DBD model. Specifically, the participants addressed the model in terms of its structure, influence, therapist's role, and value in group therapy.

Theme 1: Structure

The DBD model was created by the researcher; however, it was based on the research and literature previously discussed. More specifically, two studies primarily supported the model: Loman (1998) and Tortora (2010).

Overall, the participants thought the model's structure was effective. Structure subthemes emphasize the importance of therapists following the model *setting* while being flexible about the *timing*—extending phases that need more time or shortening phases that create anxiety or open material the therapist does not have time to deal with in the session, as well as signaling *transitions* between parts and phases.

Another subtheme that emerged under the structure theme was *consistency* in the DBD model, which assisted in reducing anxiety and creating a safe environment for mothers and children. Providing predictable and consistent care was mentioned in the literature. Kestenberg and Buelte (1977) addressed the importance of providing children with consistent and predictable caring, for their developmental level. Kestenberg and Brenner (1985) later added that providing a predictable and consistent therapeutic relationship promoted feelings of trust and safety.

In addition, participants mentioned the importance of having a therapeutic *contract* and being involved with recruitment into the group.

Theme 2: Influence

The results indicate the DBD model influences nonverbal communication between mother and children. The Weissberg (2013) pilot study had noted the influence of trauma and stress on mothers' nonverbal behaviors towards their children, and the results of the current study support and expand this result. For example, questionnaire and interview data show three DBD groups improved appropriateness of four nonverbal behaviors: eye contact, facial expression, distance, and holding. Improved appropriateness of rhythm was noticed in two of three DBD groups, and participants discussed the model's value in creating a unified rhythm for the group. Only one

participant addressed improved breathing; the other two therapists marked breathing in both questionnaires as “not applicable.”

This study’s findings mirror theorists and researchers’ (e.g., Bion, 1963; Krueger, 1989; Shai & Belskey, 2011; D. W. Winnicott, 1958, 1971) emphasis on the importance of space and holding between parent and child. For example, D. W. Winnicott (1971) wrote about “potential space” (p. 12), a physical and hypothetical space between the mother and her infant. D. W. Winnicott (1958) recognized the importance of the mother’s bodily and metaphorical holding, which allows the infant contact with the world without experiencing overwhelming stimulation. Bion (1963) described the mother’s hands supporting the baby’s body in symbolically and materially. Krueger’s (1989) theory acknowledged the importance of touch and how it facilitates separating the body from the outside world. Shai and Belskey (2011) noted the importance of the quality of movement, rhythm, synchrony, space, time, sensation, and touch towards infants in their research. Beebe (2011) noted the importance of creating nonverbal means of communication between mothers and infants while working in dyadic settings. Other studies (Beebe, 2005; Beebe & Lachmann, 2002; Stern, 1985, 1998) concurred with Shai and Belskey and with Beebe, describing the significant influence nonverbal gestures such as facial expression, voice, rhythm, and movement have on the parent-child relationship.

The current research emphasizes the important of nonverbal communication between mother and child and uses the DBD model to assist in improving appropriateness of the communication. The results show specific cases of improved nonverbal behaviors and communication between mother and her child.

The DBD model influences other positive improvements for mothers. The subtheme *opportunities for change and growth* includes concepts such as mothers recovering from pain and growing; becoming more active; learning to let go; focusing on and listening to the child; persisting in the group; developing mutuality and intimacy with their children and with other mothers; bonding better; and engaging in quality time. The model also influences positive improvement for the children, including subthemes of gaining confidence, feeling freer, and improving behavior.

A negative subtheme also emerged—*anxiety and embarrassment* the mothers felt through some model stages. However, the anxiety and embarrassment improved as the sessions proceeded and the mothers learned the setting.

Theme 3: Therapist's Role

Participants used therapist interventions based on the model ideologies. The results show *observing* was very important for the first phase, allowing the therapist to learn more about the mother, the child, and their relationship. Tortora (2010) also emphasized observation as an important therapy intervention using “dyadic attachment-based, nonverbal, communicative, and expression” (p. 41) or DANCE.

Results show that participants used *listening and mirroring* as another therapeutic intervention consistent with the DBD model ideologies. Mirroring as an intervention is well known in psychotherapy in general and dance therapy in particular (Berrol, 2006; Fraenkel, 1983; Hartshorn et al., 2001; Mills & Daniluk, 2002). Marian Chace, a founder of DMT in the United States, used empathic reflection and interaction with each client in her group therapy (Chaiklin & Schmans, 1993), and Blum (2015) developed embodied mirroring. McGarry and Russo (2011) proposed that mirroring in DMT enhances

understanding of others' emotional intentions through enhanced use of mirror neuron circuitry.

Some participants mentioned *creating a safe space* as a basic intervention. Others discussed using *body movement* and *touch interventions* to create stability, raise body and movement awareness, and widen the mothers' movement repertoires. In parallel, Punkanen, Saarikallio, and Luck (2014) discussed the importance of body activity as a therapeutic intervention. They shared how body awareness exercises helped participants in DMT groups become more aware of bodily sensations related to different emotions. In addition, the movement improvisations provided a safe physical mode to express strong and difficult emotions such as anger. They summarized that shared creative and positive bodily experiences in the DMT group enhance the features of extraversion, secure attachment style, and satisfaction with life, which, in turn, leads to decreased depression and anxiety.

Lastly, the results show participants felt it important to encourage nonverbal communication (as broadly discussed above, Theme 2).

Theme 4: Value in Group Therapy

The study results indicate therapists saw the value of working in group therapy, particularly self-learning while in a group, seeing others in the same situation, finding comfort in being with others in similar situations, developing the same rhythm with other mothers, and improving the bond among mothers. These features further accelerate the mothers' progress, especially in stability, and improve their relaxation, vitality, and happiness. This result finds support in the literature. Previous research mentioned the effectiveness of group therapy (Burlingame et al., 2013; Burlingame et al., 2014), and the

benefits of being with others in similar situations, sharing feelings with them, and creating social interactions with them (Ready et al., 2012; Smith et al., 2005).

Results Summary

I developed the DBD model with the goals of reducing the transmission of stress between mother and child (Sossin & Birklein, 2006) and of teaching parents nonverbal ways to bond and attune better to their children. The DBD model also functions as a group therapy based on the premise that mothers benefit from the support of and sharing feelings with other mothers in similar situations (Van Puyvelde et al., 2014). The purpose of this study was to investigate the feasibility of introducing new body-based interventions while using the DMT method to address the issues of stress, attunement, and nonverbal communication skills.

The first research question concerned dance therapists' experiences with the DBD model, specifically focusing on the impact or lack of impact on dyadic bonding and stress levels. Results indicate participants experienced the DBD model as creating a positive influence on the dyad, the mother, and the child. Study participants shared their experiences and noted the DBD model encouraged mothers to create better nonverbal communication with their children, highlighting specific cases of improved nonverbal behaviors and communication between mothers and their children. In addition, participants reported the DBD model created positive improvements in relationships, including in developing mutuality and intimacy, bonding better, happiness in the relationship, and quality time.

The second research question concerned the model structure and options for improvement. Overall, participants were satisfied with the model structure, and

recommended therapists be flexible about the model timing in each phase and more active recruiting dyad participants. Lastly, the three participants who led a DBD group therapy mentioned its value in group therapy.

Study Limitations

The first limitation for this study is that all participants were Israeli and female therapists. Including participants from the US and other countries and diversifying participant gender may have produced different outcomes.

Because sample selection criteria did not require, for example, recommendations from previous instructors or supervisors, I determined the *quality* of the participants based only on my evaluation of their experience and interviews. However, I became familiar with the interviewees through the processes of recruiting, teaching them the DBD model, and supervising them in weekly sessions. Although this contact risked leading participants to adopt my point of view on the subject and influencing their responses, participants appeared comfortable with me and their answers did not seem to try to please me—rather, to assist in creating a model that might help them in the future.

Further, I tried to ensure participants followed the DBD model by requiring weekly reports and Skype meetings. However, I was not in the room during each session and did not videotape the sessions. Therefore, I cannot be certain participants always correctly followed the DBD model.

The main limitation arises from only one researcher analyzing the data, which risks subjectivity. Therefore, although I used precautions to maintain objectivity and not impose my perceptions on the subject, it is possible my experiences influenced the wording or content of interview questions or the tone of voice. Future studies should

incorporate one or more independent coders to provide interrater reliability and reduce potential subjectivity in the study.

Another limitation is that the research is based on therapists reporting their own performances, which again may introduce nonobjective data into the study. Having observers report on the therapists' performance will reduce potential data subjectivity in future studies.

In addition, the toys selection for the free time (Phase 1) and the circle time Part 2 were standard for all the DBD groups, rather than selected for their individual communicative properties.

Lastly, one of the four participants practiced an individual DBD therapy, whereas the others led group therapies. Although this unplanned deviation provided broader knowledge regarding the influence of DBD therapy, the necessary adaption to the individual therapy presented a difference experience of the DBD model.

Implications for the DMT Field

The literature emphasized the influence of the attachment relationship during the first years of life (e.g., Bowlby, 1973). The DBD model holds the potential to assist dance movement therapists to improve communication between mothers in general, and stressed mothers in particular, with their children during the first years of the children's lives. Specifically, study participants reported improved communication between mother and child using the DBD model by developing better nonverbal communication, mutuality and intimacy, bonding, happiness in the relationship, and quality time.

In addition, the mother's condition is important as she nurtures herself and her child. Participants in this study reported the DBD model created positive improvements

for mothers: recovering from pain and growing; being more active; learning to let go; focusing on and listening to the child; gaining relaxation, vitality, and happiness; providing stability; persisting in the group; and improving relationships with other mothers. Although the DBD model might be a great tool for therapists to use while working in a dyad setting, continued research is important to finding ways to expand and improve the model.

Furthermore, the research spotlighted the study participants' perception of the role of the therapist, which I found important for future studies and therapist training in the DBD model. Thus, I incorporated some participant recommendations regarding the model phases and therapist role into the Considerations for Future Implementation of the DBD model at Appendix F. Also based on these participant recommendations, I would update the DBD model to incorporate the following:

1. Participants noted they wanted to know the participants better before starting the group. Thus, the updated model will recommend therapists be more involved in recruitment of group participants, for example meeting privately prior to the group with each dyad referred by social services.
2. The original model included instruction for transitions between some phases, but participants were not always clear on *how* and *when* to use the signal. Thus, in the updated model, therapists will be instructed specifically *how* and *when* to signal transitions.
3. In Phase 2 Part 2, I had tried to encourage mothers' observation of the babies. However, participants noted the importance of mothers having time for themselves. In addition, they addressed that not all the mothers were ready to

attempt such observation. As such, this part of the updated model will focus only on the mothers.

4. Also in Phase 2, Part 2, the updated model will instruct therapists on specific types of activities and movements to use in each session, improving consistency and clarity.

Recommendations for Future Research

It is recommended that future studies include objective measures to assess the immediate and long-term outcomes of using the DBD model with mothers and children, and as a treatment that can be added to other therapeutic interventions with this population. In addition, the researcher should have support from a co-researcher for data analysis, independent coding, and interrater reliability to reduce subjectivity of the study.

Future studies might include larger samples for both quantitative and qualitative research. Quantitative research might incorporate relationship questionnaires to determine whether, and the degree to which, the DBD model improved the mother-child relationship.

Further, future samples might be mothers who participate in DBD group therapy, workers who provide social services for those mothers, or dance therapists who observe the DBD sessions, rather than therapists reporting their own performances.

Future DBD model sessions might include a wider variety of group therapy participants—mothers, fathers, and even caregivers—or broaden the age of the children from infants to toddlers. In addition, the model should be studied with therapy participants and therapists from other culture groups. Further, the session can be

videotaped and analyzed by a team (two or more) of professional dance movement therapists to determine ways to modify or improve the current DBD model.

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APPENDIX A

PERSONAL BACKGROUND FORM

Name (Participant in this study): _____

1. Check all that apply:

Single Married Divorced Widowed Living with intimate partner

2. Living Arrangements. Currently living with (check all that apply):

Roommate Significant other/romantic partner Parents Siblings Other (please specify):

_____)

3. FAMILY INFORMATION

Spouse/Partner _____

Children (*Please list ages of all children and Yes/ No next to it in response to whether living with you or not – e.g. 1.5 Yes, 18 No*)

4. Do you have any cultural backgrounds that are important to you? If yes, please give a brief description:

5. Are you currently employed? Yes, full-time Yes, part-time No, currently unemployed

If yes, what type of work do you do?

6. Which Dance Movement Therapy program did you graduate from and in which year?

7. How many years of experience do you have as a dance movement therapist?

8. Have you been hospitalized for a psychiatric/psychological reason? Yes No

If yes, approximate dates and

issue: _____

9. Are you currently taking any medications? Yes No

Type of Medication Average Dosage Frequency

Type of Medication	Average Dosage	Frequency
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Chronic or frequent headaches

Dizziness

Fainting or Blackouts

Injury: What kind? _____ Seizures/Convulsions

Memory problems

10. Have you ever had any personal (individual) psychotherapy? Yes No; if yes, what type of therapy did you seek out and for how long have you been treated?

11. Have you ever had couple counseling or family therapy? Yes No

if yes, what type of therapy did you seek out and for how long have you been treated?

12. If you have received therapy before, was it helpful? Yes No

If yes, in what way was it helpful?

_____ If not,

in what way was it unsatisfactory?

13. Where your parents ever separated? Yes No If yes, when?

14. Have you ever used any drugs or medications other than as prescribed? This includes prescription medications, marijuana, PCP, LSD, amphetamines, barbiturates, cocaine, opiates, Ecstasy, and others.

Yes No

Are you currently using any of these drugs? Yes No

If yes, please fill out the requested information:

Type Frequency/Amount Duration How taken

15. Do you drink alcohol? Yes No

If yes, how much do you drink? _____ drinks per _____

If yes, do you feel your drinking has caused any problems in your work, school, or relationships? Yes

No Please explain: _____

16. Have you experienced any particular sources of stress in the last year? Yes No

If yes, please explain:

17. Is there any other background information you think would be helpful to know? Yes No

If yes, please explain:

APPENDIX B

TRAINING SYLLABUS:

DBD MODEL

A GROUP THERAPY WITH STRESSED MOTHERS

Instructor: Hadas Weissberg, R-DMT

Contact information: hweisber@lesley.edu; 617-803-5269

Description

This course introduces students to the dyad bonding dance (DBD) model, a dance movement group therapy based on previous DMT approaches, including the work of Kestenberg (1975), Tortora (2006, 2010), and Beebe et al. (2012). The course combines theoretical reviews of literature and research with in-class experiential components. The readings provide students with the necessary background to understand elements of stress and its impact on individuals and on other dimensions such as attachment relationship and nonverbal behaviors between mother and infants. Readings also provide context into the effectiveness of DMT as a therapeutic tool to cope with stress, and DMT methods while working with stress, trauma, children, and mother-baby dyads. The experiential portion provides a self-experience with the three levels of the DBD model.

Objectives

1. Build a strong foundational understanding of the DBD model and other bodily theories while working with stress in a dyadic setting.
2. Develop theoretical knowledge on treatment techniques currently available, with emphasis on DMT and other body-oriented psychotherapies.
3. Process the in-class DMT experiences and embody the results of these exercises.
4. Share knowledge in group discussions, process self-experiences with fellow students, and develop DMT methods and skills for working with stressful mother patients.

Requirements

Attendance: Students are expected to attend all classes.

Assignments: Students are expected to submit papers and assignments on time and in accordance with APA style guidelines.

Reading assignments: Students are expected to read all assignments before the class for which they are due.

Course Schedule

The class will be an intensive class. It will include two 6-hour sessions.

Day 1: First Phase

This phase is an introduction to nonverbal behaviors and patterns between stressed mother and their babies through experiential self-work, followed by one-on-one discussions and sharing with peers.

Teaching techniques

1. The instructor leads the group in improvisational experiences in class on how trauma and stress are stored in the body, with DMT methods and guided imagery.
2. Students are divided into 2-person peer groups. One participant moves, then the other person mirrors his or her peer with movement as well.
3. Peers sit in front of each other while paying attention to nonverbal behavior patterns, such as eye contact, facial expression, breathing, and muscle tone.
4. Peers share their thoughts and feelings with each other in the dyad.

Assigned Reading

van der Kolk, B. A., Pelcovitz, D., Roth, S., & Mandel, F. S. (1996). Dissociation, somatization, and affect dysregulation. *American Journal of Psychiatry*, 153(7), 83-94.

This article is an introduction to trauma symptoms and outcomes. The authors conducted a quantitative analysis to investigate the relationship among the various symptoms of PTSD such as dissociation, somatization, and affect dysregulation. All were found to represent a range of adaptations to trauma.

Lewis, P. (1996). Depth psychotherapy in dance/movement therapy. *American Journal of Dance Therapy*, 18, 95-114.

This article compared dance therapy to the world of imaginative play in childhood. The writer claimed dance therapy can be an effective approach to address unconscious symptoms. This article described a few examples of dance therapy techniques that employ the somatic unconscious. In addition, the writer concluded that authentic movement changes over time as a reflection of recovery from childhood trauma.

Shai, D., & Belskey, J. (2011). Parental embodied mentalization: Let's be explicit about what we mean. *Child Development Perspectives*, 5(3), 187-188.

This article emphasized the importance of nonverbal communication patterns for parent and child relationship and attachment. Nonverbal cues mentioned were the quality of movement, rhythm, space, time, sensation, and touch towards infants.

Sossin, K. M., & Birklein, S. B. (2006). Nonverbal transmission of stress between parents and young child: Consideration and psychotherapeutic implication of a study of affective movement patterns. *Journal of Infants, Child, and Adolescent Psychotherapy*, 5(1), 46-69.

This article described research related to transmission of stress between mothers and infants. By using the Kestenberg Movement Profile (KMP), the authors showed that when parents are more stressed, their attunement to their children decreases and thus the child-parent attachment becomes insecure. In addition, the researchers found common nonverbal behaviors with stressed parents: neutral abruptness and neutral flow adjustment.

Additional Readings:

Beebe, B. (2005). Faces in relation: Forms of intersubjectivity in an adult treatment of early trauma. In B. Beebe, S. Knoblauch, J. Rustin & D. Sotter (Eds.), *Forms of intersubjectivity in infants: Research and Adult Treatment* (pp. 89-144). New York, NY: Other Press.

Beebe, B., & Lachmann, F. M. (2002). *Infant research and adult treatment*. Hillsdale, NJ: Analytic Press.

Stern, D. N. (1985). *The interpersonal world of infants*. New York, NY: Basic Books.

Stern, D. N. (1998). The process of therapeutic change involving implicit knowledge: Some implication of developmental observation for adult psychotherapy. *Infants Mental Health Journal*, 19, 300-308.

These articles described the significant influence of nonverbal gestures such as facial expression, voice, rhythm and movement on the parent-child relationship.

Day 1: Phase 2

This phase includes the theoretical background of the DBD. We will review readings, highlight important and relevant points, and engage in group discussions.

Teaching Techniques

1. General overview of the theories on which DBD is based (PowerPoint)
2. Review of class readings
3. Group discussion about students' thoughts, ideas, knowledge, and experience with aspects of these theories

Assigned Reading

Beebe, B. (2011). Introduction of mothers, infants and young children on September 11, 2001: A primary prevention project. *Journal of Infant, Child and Adolescent Psychotherapy, 10*(2-3), 145-155.

This article described a special therapeutic project for mothers, infants, and young children who were affected by the World Trade Center attacks on September 11, 2001.

The project included a group of eight therapists: one was a dance therapist; another was a psychologist knowledgeable with KMP. All the therapists worked for 10 years with approximately 40 families, all of whom had suffered the loss of husbands and fathers.

Participants in this group were women who were widowed while being pregnant or with infants born in the previous year, 2000. The therapists used verbal and nonverbal approaches based on LMA and KMP.

Tortora, S. (2010). Way of seeing: An early childhood integrated therapeutic approach for parents and babies. *Clinical Social Work 38*(1), 37-50.

This article described the “Way of Seeing” technique, an early childhood therapeutic approach for parents and their babies. This technique uses implicit ways of knowing, nonverbal exchange, and body movement-oriented experiences as primary modes to gather information and to communicate. Moreover, the Ways of Seeing psychotherapeutic program utilizes nonverbal movement analysis, dance, movement, play, and parent-child interactions as tools for the assessment of the parent-infant attachment relationship, as well as for intervention. This approach is based on the Laban Movement Analysis (LMA) system.

Loman, S. (1998). Employing a developmental model of movement pattern in dance movement therapy with young children and their families. *American Journal of Dance Therapy, 20*(2), 101-115.

This article described how dance movement therapists can use the KMP in their clinical work. It also suggested ideas about how parents and teachers can learn to enhance their parenting and teaching skills by observing and interacting with children using nonverbal communication patterns.

Day 1: Phase 3

In this phase, we will use experiential methods step-by-step to teach the DBD model stages. We will learn about songs, bodily interaction, and dance. In this phase, two mothers and two babies will participate to present the three stages of the model.

Teaching Techniques

1. The instructor will lead a short version of a DBD session, while pausing after

each stage of DBD to explain rationale, techniques, and methods and to answer students' questions.

2. Group discussion about student thoughts, ideas, and new knowledge

Day 1: Phase 4

This phase will provide a summary, theory, and rationale for the DBD model.

Teaching Techniques

1. General, overview and summary of the DBD model, methods, background and rationale. Tying a note between the theory and practice.
2. Group discussion about student thought, ideas, knowledge and experience with the DBD model.

Day 2: Phase 1

In this phase, we will review the DBD model.

Teaching Techniques

1. Review of the first day conclusion
2. Group will be divided into subgroups of three. Each subgroup will discuss one stage in the DBD model.
3. Each group will present in an artistic way one stage of the DBD.
4. Group discussion about student thoughts, ideas, knowledge and experience with the DBD model

Day 2: Phase 2

Participants will receive a case student and, in pairs, will discuss.

Teaching Techniques

1. Class is divided into peer groups. Each peer set has a “case study” for which they need to s therapeutic interventions, treatment plans, and action plans.
2. Peers will prepare for presentation.

Day 2: Phase 3

Student pairs will present their case studies.

Teaching Techniques

1. Each peer group will present for 15 minutes. The presentations should include a role-play demonstration of a treatment plan for individuals and a group.
2. After each presentation, there will be group discussion about the presentation.

Day 2: Phase 4

Class discussion and synthesis of materials learned in class

Teaching Techniques

1. Group discussion about class conclusion and questions that were left open
2. Guidelines for online assignment and final paper

Assignments

Assignment A

Class will be divided into pairs

1. Synthesizing our class experiences and the readings, please write a 300-word essay that expresses your thoughts on the subject of DMT treatment for stressful mothers and babies.
2. Provide feedback to your pair-mate with respect to his or her essay.

Assignment B: Nonverbal Behavior Patterns

1. Please write one paragraph on each of the studied topics that expresses your thoughts and is backed by literature and personal experience:
 - Eye contact and facial expressions
 - Breathing
 - Holding and distance between mother and baby
 - Body posture and movement
2. Provide feedback to your pair-mate with respect to his or her essay

Final Assignment

Write a five-page reflection paper about your personal development during this course and what you have learned. The paper will include (a) self-reflection on personal journey, (b) synthesis of what you learned, (c) self-assessment of skills that you have developed during the course, (d) review of relevant literature, and (e) thoughts and ideas on how you plan to use this class in practice. You are welcome to add artistic elements to support your paper.

Assessment Measurements

1. Demonstrate understanding and critical thinking
2. Creativity
3. Implementing skills
4. Clear writing and according to APA style guidelines. Assignment papers can be in English or Hebrew.

APPENDIX C**LESLEY UNIVERSITY IRB APPROVAL**

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Institutional Review Board

DATE: June 29, 2015

To: Hadas Weissberg

From: Robyn Cruz and Terrence Keeney, Co-chairs, Lesley IRB

RE: **IRB Number: 15-023**

The application for the research project, "EVALUATION OF THE DYAD- BONDING – DANCE MODEL FOR MOTHERS AND INFANTS EXPOSED TO STRESSFUL LIFE SITUATIONS" provides a detailed description of the recruitment of participants, the method of the proposed research, the protection of participants' identities and the confidentiality of the data collected. The consent form is sufficient to ensure voluntary participation in the study and contains the appropriate contact information for the researcher and the IRB.

This application is approved for one calendar from the date of approval.

You may conduct this project.

Date of approval of application: June 29, 2015

APPENDIX D

CONSENT FORM



Informed Consent Form:

Study of EVALUATING THE DYAD –BONDING-DANCE (DBD) MODEL FOR MOTHERS AND INFANTS EXPOSED TO STRESSFUL LIFE SITUATION : A STUDY OF DANCE MOVEMENT THERAPIST

Principal Investigator: *Hadas Weissberg* , co-researcher, *Professor Robyn Cruz*, PhD program in Expressive Therapies, Lesley University

You are being asked to volunteer in this study to assist in my doctoral research titled: *Evaluating the Dyad- Bonding- Dance Model for Mothers and Infants to Stressful Life Situation: A Study of Dance Movement Therapists* . The purpose of the study is to examine a dance movement therapy model- the dyad, bonding dance (DBD) model. This model is a group therapy with stressed mothers and their children designed to improve the bonding between mothers and children. The study will address therapeutic interventions with mothers in relation to the mothers’ movement, breathing patterns, facial expressions, touch and holding, rhythm, and use of space and time toward their children. The main focus of this study is to explore participant’s perceptions of the ability of the D.B.D model to create better bonding, and reduce anxiety and stress, between mothers and infants.

Your participation will entail two interviews of 60 minutes. The first interview will be conducted after six sessions of D.B.D group therapy, and the second interview will be after 12 sessions. You will answer questions concerning the D.B.D model’s abilities improve bonding and reduce anxiety and stress between mothers and infants

In addition, you will write a journal with a short description of each session. The description will include what happened in the session, to make sure that you follows the DBD model. In addition, you will describe what you did notice about the parents and infants,interaction and how do they react to the movement activities in DBD model, What happened in the group process, Lastly you will describe movement pattern and other non- verbal pattern of mother and infants.

You will be personally interacting with only myself as the researcher. This research project is anticipated to be finished by approximately March , 2015.

I, _____, consent to participate in Hadas Weissberg research study.



I understand that:

- I am volunteering for two 60 minutes verbal interviews.
- The sessions will be audiotape or videotaped if necessary.
- My identity will be protected.
- Session materials, including reports, video or audiotapes will be kept confidential and used anonymously for purposes of supervision, professional presentation and/or publication.
- I am free to end the session at any time, and will not lose any benefits that I might otherwise gain by staying in the study.
- This study will not necessarily provide any benefits to me. However, I may gain increased self-knowledge and other personal insights that I may be able to use in my daily life and/or professional practice. The results of the study may also help to increase public and professional awareness of the needs stressed mother, and the advantages and disadvantages of DMT work in general and DBD model in particular.
- The audio recordings, video recordings, and transcripts will be kept in a locked file cabinet in the investigator's possession for possible future use. However, this information will not be used in any future study without my written consent.
- The therapist is ethically bound to report, to the appropriate party, any criminal intent or potential harm to self.
- I may choose to withdraw from the study at any time with no negative consequences.

Confidentiality, Privacy and Anonymity:

You have the right to remain anonymous. If you elect to remain anonymous, we will keep your records private and confidential to the extent allowed by law. We will use pseudonym identifiers rather than your name on study records. Your name and other facts that might identify you will not appear when we present this study or publish its results.

If for some reason you do not wish to remain anonymous, you may specifically authorize the use of material that would identify you as a subject in the experiment. You can contact my advisor Professor Robyn Cruz by email: rcruz@lesley.edu with any additional questions. You may also contact the Lesley University Human Subjects Committee Co-Chairs (see below)

You will be given a copy of this consent form to keep.

a) Investigator's Signature:



Date _____ Investigator's Signature _____
 Print Name _____

b) Subject's Signature:

I am 18 years of age or older. The nature and purpose of this research have been satisfactorily explained to me and I agree to become a participant in the study as described above. I understand that I am free to discontinue participation at any time if I so choose, and that the investigator will gladly answer any questions that arise during the course of the research.

Date _____ Subject's Signature _____ Print Name _____

There is a Standing Committee for Human Subjects in Research at Lesley University to which complaints or problems concerning any research project may, and should, be reported if they arise. Contact the Committee Co-Chairs Drs. Terry Keeney (tkeeney@lesley.edu.) and Robyn Cruz (rcruz@lesley.edu.) at Lesley University, 29 Everett Street, Cambridge Massachusetts, 02138.

APPENDIX E

QUESTIONNAIRE: APPROPRIATE NONVERBAL BEHAVIORS

The following set of questions asks about your perception of mothers' nonverbal behaviors. The goal of this set of questions is to rate how appropriate were the mothers' nonverbal behavior towards their infants during the session.

Question #1:

How many participants (mothers) attended the session?

Question #2:

Use the table below to rate how appropriate was the mothers' nonverbal behavior. The total across each row should add up to the total number of participants you answered in Question #1.

	Strongly appropriate	Appropriate	Inappropriate	Strongly inappropriate
Eye Contact				
Facial expression				
Holding				
Breathing				
Distance				
Rhythm				

Name:

Signature

Today's Date:

APPENDIX F

CONSIDERATIONS FOR FUTURE IMPLEMENTATION OF THE DBD MODEL

The DBD model was created by researcher; as such, no previous literature specifically addressed the effectiveness of DBD model structure. However, therapists participating in the research emphasized the importance of Phases 1 and 2 (Free Play and Circle Time, respectively), but believed it unrealistic to use Phase 3 (Closure). Instead, they used the time set aside for Phase 3 to add time to other phases or to end the session. Thus, this appendix addresses the participants recommended structure, primarily related to Phases 1 and 2, for consideration in future implementations of the DBD model.

The study results highlighted the roles of each phase in DBD model. Specifically, in Phase 1, the therapist observes while mothers look at and build trust among themselves. Participants found Phase 2, Part 1 (Hello song/bodily activity) to be the most significant part of the model—joyful for mothers and babies, while leading mothers to become more active and involved in the communication with their babies. In Phase 2, Part 2 (infants interact with toy/mothers observe and mirror), the topics that came up were of mothers missing time for themselves, their difficulty in taking time for themselves, and letting the children be freer to explore the space.

Participants mentioned Phase 2, Part 3 (mothers dance with babies) as difficult to create for the therapist and mothers. They used it mostly in assisting mothers to feel more grounded and centered, and to change balance. The results show the closeness between mothers and children that arose in this part was uncomfortable for the mothers in group therapy. However, in the one individual therapy situation, the therapist-participant

actually reported this part to be very important. It created joy, happiness, and new ways of playing and bonding between the mother and her child. Finally, Phase 2, Part 4 (Goodbye song) was important and sufficient for creating closure.