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A Comparison of Body-Based Therapies of Infant Development: A Literature Review

Capstone Thesis

Lesley University

May 18th, 2024

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Dance/Movement Therapy

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Abstract

In this thesis, I discuss two body-based therapies and explore their theory, body movement observation, assessments, application, and qualifications within an infant population. After my research, I have a more in-depth understanding of the differences and similarities between the methods and have more comprehension around what makes dance/movement therapy unique. I discovered that dance/movement therapists can collaboratively work alongside any medical facility due to the extensive training one must go through. A dance/movement therapist can use an assortment of assessments to give a client a treatment plan designed uniquely for them and their therapeutic goals. A dance/movement therapist can hold space for an individual with trauma or undiagnosed medical illness when working with body-based therapies. A dance/movement therapist can be trained in the framework of somatic movement therapist. Furthermore, I have a better understanding of who I am, professionally.

Keywords: dance/movement therapy, somatic movement therapy, infant development, infants, children, medical illness, body-mind centering, basic neurocellular patterns

Author Identity Statement: The author identifies as a straight, mixed race, cis-gender woman from New England with Southern Indigenous American and European ancestral roots.

Infant Theory and Application, A Comparison of Body-Based Therapies

Introduction

In the world of therapy, there are many offerings/methods an individual can seek to promote growth. Body-based therapy can be used, but the different types of nomenclature can be daunting and confusing when an individual is looking for a specific type of service. Some types of body-oriented therapies include but are not limited to dance/movement therapy (DMT), somatic movement therapy (SMT), somatic psychology, body psychology, and somatic experiencing. As a future dance/movement therapist, I was curious to learn more about the confusing number of body-oriented therapies, theories, and applications.

A DMT graduate student is taught to produce an elevator pitch to convey and defend their future line of work. In this 30-second speech, a student describes what dance/movement therapy is, how it is beneficial to a particular population, and how it provides therapeutic value. What occurs after the speech is any questions the receiver of that speech has about dance/movement therapy. One question that has always come up for me as a DMT student is: What are the differences and similarities between DMT and any other body-based therapies that are offered? Types of body-based therapies are listed but not limited to dance/movement therapy, SMT, somatic experiencing, somatic psychology, somatic therapy, body psychology, and eye movement desensitization and reprocessing. With several body-based methods, what makes DMT special?

Building my comprehension around other body-based therapies is important to my work as a future dance/movement therapist to feel confident and grounded in the work in which I am trained. As a future therapist with ethical responsibility, I must be able to know when to refer a client when the treatment is not working for that client, and what method or treatment should be

referred. As a future dance/movement therapist, it is important for me to know what frameworks are possible for me as I continue my education. Can a dance/movement therapist practice the theory and application of a somatic movement therapist? Can a somatic movement therapist practice the theory and application of a dance/movement therapist? Can a dance/movement therapist work alongside a somatic movement therapist for collaborative care of a client?

As part of my studies in graduate school, I was introduced to several frameworks that dance/movement therapists have used in the past to aid them in body movement observation and analysis. These frameworks were used as strategic tools to aid a DMT in assessment and creation of a treatment plan. One framework that piqued my interest in continuing my education in was called Body-Mind Centering, created by Bonnie Bainbridge Cohen. I witnessed Cohen working with infants in the film, *The Moving Child III* [Film]. In the film, Cohen works with an 11th month old, Bodhi, who has not learned to crawl yet. Cohen is seen using a material like an emergency rescue blanket, which is aluminum in color, and makes a crinkle sound. Cohen places Bohdi down on his anterior side to explore the prop offered. Cohen describes her thought process to encourage Bohdi to crawl -- first by placing a hand on his knee that is now bent at the thigh-hip connection -- to anticipate a pushing off her hand to initiate a crawl. Bohdi does not react to that method, so Cohen places the prop under the lower half of his body. As Bohdi turns his upper half to find the paper, Cohen and Bodhi's caregiver move the prop to lead him around in a circular motion (Kemble, 2019, 50:00). After witnessing this therapeutic interaction, I desired to learn more about Cohen's work with infants, to one day add her framework and expertise to my work as a future dance/movement therapist.

Method

At the start of my research, I had anticipated a literature review with a topic that compared a variety of body-based therapies. During my time studying dance/movement therapy (DMT), I was curious about all the many body-based psychotherapies that were offered. All these therapies differed in their respective educational backgrounds, time spent to receive certifications, titles received after becoming certified, interventions, frameworks, populations of clients. With so many body-oriented therapies offered, I felt there was room for further exploration. The purpose of my research was to build a platform of understanding in my comprehension of what body-based therapies are currently offered.

As I collected information about these therapies, there were more than I thought, and they each overlapped and were different from each other in nuanced ways. The breadth of all this information began to feel overwhelming, so I decided to pivot, and narrow-in my topic. I have always had an interest in a particular framework created by Bonnie Bainbridge Cohen, who is a somatic movement therapist. I always had an interest in continuing my education by receiving training in her work with infants. In the world of DMT, Suzi Tortora had just published a book about her work with infants and children titled *Dance/Movement Therapy for Infants and Young Children with Medical Illnesses: Treating Somatic and Psychic Distress* (Tortora & Keren, 2023). With the plan to analyze each practitioner and corresponding specialization, my thesis topic then transformed from “An Evaluation of Body-Based Therapies” to “Infant Theory and Application, A Comparison of Body-Based Therapies”.

The next step of my research began by gathering the literature based around the practitioners I wished to focus on in my thesis topic. Those books are as follows:

Dance/Movement Therapy for Infants and Young Children with Medical Illnesses: Treating

Somatic and Psychic Distress (Tortora & Keren, 2023), and *Basic Neurocellular Patterns: Exploring Developmental Movement* (Cohen et al, 2018). I collected academic articles through databases such as the Lesley Library and Academia. Searches included subjects and keywords such as: dance/movement therapy (DMT), infant, children, somatic, Suzi Tortora, Bonnie Bainbridge Cohen, infant development, dance therapy, and somatic movement therapy (SMT). Research items were limited to peer reviewed journals and academic articles. I researched each practitioner's biography on their website, which included a history of training, certifications, and books written while adding to the research of their specialization.

After several references were found, I began organizing my information into a word document which did not take long to get overwhelmingly unorganized. I initially thought of creating a poster board for the information but decided for efficiency and effectiveness of the time spent and amount of work, it would be best to create a table. The table I created had one column for DMT, one column for SMT, and themes of research (See Figure 1).

Figure 1

My Research Graph

	Dance Movement Therapy	Somatic Movement Therapy
Definition Therapy	Dance/movement therapy (DMT) is defined by the American Dance Therapy Association (ADTA) as the psychotherapeutic use of movement to promote emotional, social, cognitive, and physical integration of the individual, for the purpose of improving health and well-being (ADTA, n.d.-a).	The International Somatic Movement Education and Therapy Association (ISMETA) defines somatic movement therapy's (SMT) purpose as "enhance human functioning and body-mind integration through movement awareness". SMT is described as practices that include: "postural and movement observations, experiential anatomy and physiology explorations, movement patterning and re-patterning, and communication and guidance through touch, verbal cues, and/or demonstration" (ISMETA, n.d.).
Practitioners	Suzi Tortora	Bonnie Bainbridge Cohen
Practitioners background	Suzi Tortora, Ed.D, BC-DMT LCAT LMHC CMA, NCC is a dance/ movement psychotherapist, mental health counselor, author, and educator. Her clinical and research specializations include the use of embodied psychotherapy, movement analysis and dance/movement therapy. Dr. Tortora's clinical work encompasses expertise with a wide spectrum of clients with diverse experiences, strengths, and challenges across the entire lifespan. She is a world-renowned specialist in the field of infant mental health and regularly trains, teaches, and presents her work, including her Ways of Seeing method, all over the world (Dancing Dialogue, n.d.-a).	"Bonnie Bainbridge Cohen (OT, RSMT, RSME) is a movement artist, researcher, educator and therapist and the developer of the Body-Mind Centering® (BMC®) approach to movement and consciousness. An innovator and leader, her work has influenced the fields of bodywork, movement, dance, yoga, body psychotherapy, childhood education and many other body-mind disciplines. In 1973, she founded The School for Body-Mind Centering® ." (Body-Mind Centering, n.d.-b) "Bonnie began her research in movement therapy and anatomy in 1958 and has an extensive background in movement, including various dance styles, dance therapy, bodywork, martial arts, yoga and voice. She has a B.S. in

	Is trained in BMC	Occupational Therapy from The Ohio State University, where she also studied dance. Bonnie was certified as a Neurodevelopmental Therapist by Dr. and Mrs. Bobath in England, as a Laban Movement Analyst by the Laban/Bartenieff Institute of Movement Studies and a Kestenberg Movement Profiler by Dr. Judith Kestenberg in New York. Her other teachers have included Erick Hawkins in dance; Marian Chace in dance therapy; Andre Bernard and Barbara Clark in Neuromuscular Re-education; Yogi Ramira in yoga, Warren Lamb in Action Profiling, Haruchi Noguchi in Japan, founder of Katsugen Undo, a method of training the involuntary nervous system; Drs. John Upledger and Richard McDonald in Craniosacral Therapy; Dr. Fritz Smith in Zero Balancing; and Frank Lowen in Visceral Manipulation.” (Body-Mind Centering, n.d.-b)
Defines work as:	“Our practice specializes in embodied and creative therapy modalities that encourage a strong awareness of the interconnections between the body, the mind, and emotions. Using Dr. Suzi Tortora’s <i>Ways of Seeing</i> method, we approach each clinical interaction with openness and curiosity knowing that the smallest gesture can be deeply informative, and the smallest change can be a transformation.” (Dancing Dialogue, n.d.-b).	Body-Mind Centering is defined as “Body-Mind Centering® (BMC®) is an integrated and embodied approach to movement, the body and consciousness. Developed by Bonnie Bainbridge Cohen, it is an experiential study based on the embodiment and application of anatomical, physiological, psychophysical and developmental principles, utilizing movement, touch, voice and mind. Its uniqueness lies in the specificity with which each of the body systems can be personally embodied and integrated, the fundamental groundwork of developmental re-patterning, and the utilization of a body-based language to describe movement and body-mind relationships. The study of BMC® is a creative process in which embodiment of the material is explored in the context of self-discovery and openness. Each person is both the student and the subject matter, and the underlying goal is to discover the ease that underlies transformation” (Body-Mind Centering, n.d.-a).
Body Movement Observation	<p>Developmental movement patterns</p> <p>Quality of movement:</p> <ul style="list-style-type: none"> • Tension • Strength • Timing • Special orientation <p>Progression of movement</p> <ul style="list-style-type: none"> • Neuromotor skills <p>Body Coordinates</p> <ul style="list-style-type: none"> • Breath-flow • Core-distal • Head-tail • Upper-lower • Body-half • Contralateral body coordination <p>(Tortora & Keren, 2023, p. 49)</p> <p>Developmental motor actions</p> <ul style="list-style-type: none"> • Yield • Push • Reach • Grasp • Pull <p>(Tortora & Keren, 2023, p. 50)</p>	<p>Prevertebrate & Vertebrate developmental movement patterns</p> <p>Prevertebrate Patterns:</p> <ul style="list-style-type: none"> • Vibration • Cellular breathing • Sponging • Pulsation • Navel radiation • Mouthing • Prespinal <p>Vertebrate Patterns:</p> <ul style="list-style-type: none"> • Spinal Patterns • Symmetrical Patterns: Homologous • Asymmetrical Patterns: Homolateral and contralateral • Brachiation and climbing <p>(Cohen et al., 2018)</p>
Assessment	<ul style="list-style-type: none"> • Alarm distress baby scale (ABDS) (Tortora & Keren, 2023, pp. 139-140) • Brazelton Neonatal Behavioral Assessment Scale (NBAS) (Tortora & Keren, 2023, p. 137) • <i>Getting to know me-hospital</i> (Tortora & Keren, 2023, pp. 209-213) 	“In this book, each of the BNP is viewed from the standpoint of normal development. They can be applied to anyone at any age of life to analyze areas of movement efficiency/inefficiency and to improve one’s proficiency of movement. If any pattern becomes overly dominant, it may prevent other patterns from emerging. By exploring all the patterns, weakened patterns can be strengthened and dominant patterns modified. This will allow the overly dominant pattern

	<ul style="list-style-type: none"> • Infant Behavior Questionnaire (IBQ) (Tortora & Keren, 2023, p. 66) • Newborn Individualized Developmental Care and Assessment Program (NIDCAP) (Tortora & Keren, 2023, p. 79) • Pediatric Pain Screening (PPST) (Tortora & Keren, 2023, p. 108) • Newborn behavioral observations systems (NBO) (Tortora & Keren, 2023, pp. 137-138) • <i>DANCE</i> tool (Tortora & Keren, 2023, pp. 141-148) 	to integrate into the total matrix of development, thereby allowing more mature behavior to emerge” (Cohen et al., 2018, p. 22, para. 4).
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Note: This graph is an example of how I organized the information that was found during the earlier stages of my research.

Limitations

The limitations found within this study are that there are many more body-based therapies, and while this study focuses on just two there could be more information incorporated if this study was done with more body-based therapies.

To conduct the largest portion of my research I used books written by both Tortora and Cohen to understand their work with the focus population. One limitation is I have not attended any of the workshops or training provided by the practitioners to learn more about their work in practice. Any details of the themes analyzed could have been left out of the thesis research, due to the lack of information in their published books. Cohen’s book has limited detail about body movement observation, assessment, and application regarding treatment. Currently, Cohen has not yet published any peer-reviewed academic articles. The only additional research found on Cohen’s work were videos such as *The Moving Child III* [Film], and videos created by The Moving Child.

In comparison to other body-based therapies, my training to become a dance/movement therapist has required a greater amount of training to become qualified. As such, I acknowledge my own bias toward dance/movement therapy.

Literature Review

Educating Others

In my studies, I was taught that I must be able to speak strongly to defend my work as a future dance/movement therapist. I was taught that I will always take an active role in educating the public, supervisors, and prospective counseling opportunities on what DMT is and how it can be therapeutically beneficial to a client's holistic health. In fact, dance/movement therapists have been defending their line of work since the time of the conception of the ADTA. In 2021, a film screening of *Dance Therapy: The Power of Movement* was shown during the Marian Chace Foundation Lecture. *Dance Therapy: The Power of Movement* (1982), that portrayed several dance/movement therapists during their clinical sessions. After the film was shown, a panel of the dance movement therapists seen in the film were present to discuss the film. The dance/movement therapists include Judith Bunney, Dr. Diane Duggan, Sharon Chaiklin, and Jane Wilson Cathcart. The reason for the creation of this film was simple, to educate that DMT was for everyone and not just for children. When asked about their intentions in the film, Judith Bunney reflected on a time when presenting the idea of DMT to many heads of foundations. Bunney stated, "We presented *Looking for Me*, the Janet Adler film. So, we went around the table afterwards, and they concluded, "Oh, this is fine for children." It was very clear we needed to open up the vision of dance therapy for many, many populations" (Biondo, 2022, p. 76). In 2024, students are informed of the importance of defending the theory, practice, and application of dance/movement therapists. The work continues.

Body Movement Observation and Analysis

With most body-based therapies, there is a component of body movement observation and analysis. A seed of one framework can be developed and transformed into something more complex and intricate.

Laban Movement Analysis (LMA) or Labanotation was developed by a man named Rudolph von Laban in the 1930s. Labanotation is a system made of symbols that records and examines movement (McLaine & Lexow, 2020). The specificities that Labanotation focuses on are body part, use of space, duration, and level (McLaine & Lexow, 2020). Other details included within the notation are where the dancer is in space and relationships to others (McLaine & Lexow, 2020). The observation element is categorized into four systems: body, effort, shape, and space, otherwise known as BESS (Hackney, 1998). Each category is broken down into further subsets of categories. The body is categorized into subsets such as head-tail, upper-lower, and breath (Hackney, 1998) and a focus of connectivity, actions, and phrasing (Whittier, 2006). Effort focuses on the dynamics and energy of the movement (Whittier, 2006). Shape, otherwise known as shape-flow looks at foundational movement such as growing/shrinking, or carving around objects/self (Hackney, 1998). Space is the direction in which an individual moves through pathways (Whittier, 2006).

In the article, *More Than One Story, More Than One Man: Laban Movement Analysis Re-examined* (2022), takes an account and explores the history of Laban and Laban Movement Analysis. The paper includes a two-part series, the first describes a controversial part of Laban's life where he held state official positions as part of the German Nazi government. The second part of the paper includes the individuals who took over Laban's work as he shifted focus away from dance in the last two decades of his life. From 1957 to 1965, the scope of Labanotation

expanded when Irmgard Bartenieff and her peers added their knowledge of effort, shape, and developmental sequencing. Imus et al (2022) states,

Bartenieff's studies of infants and young children in collaboration with Judith Kestenberg and Lamb led to adaptations in notational practices (tension flow writing) and the introduction of modes of shape change into the movement analysis taxonomy. The fruitful application and adaptation of Effort/Shape in therapeutic contexts ultimately led Claire Schmais and Elissa White to incorporate these Laban-based concepts in the original dance/movement (Imus et al, 2022, p. 178).

Bartenieff's contribution to Laban Movement Analysis inherits a fundamental role in the creation of what is now dance/movement therapy.

Review of assessments on infants utilized by Tortora

In an article produced by Ulak et al (2020), the alarm distress baby scale (ADBB) was evaluated in both full and modified versions in infants in Nepal. ADBB is an 8-item observer-rated screening tool that detects social withdrawal in infants. In the study, 600 infants were recorded during a pediatric visit. 100 infants were scored by an expert rater, or by two trained staff utilizing the full ADBB scale. All 600 infants were scored with the modified version of ADBB. Results proved that the modified version of ADBB was more of an acceptable methodology in the large community in Nepal.

In a quantitative study created by Sung et al (2022), the Infant Behavior Questionnaire (IBQ) is applied to infant siblings of autistic children. The study was created to collect data regarding temperaments from infants from the ages of 6 to 12 months old. IBQ was used to detect Emotional Positivity in siblings and the ability to diagnose autism spectrum disorder from an earlier age.

Neonatal Behavioral Assessment Scale (NBAS), 4th edition, was reviewed by Athansiou et al (2021) by the Mental Measurements Yearbook. NBAS was designed to increase attachment between caregivers and promote individual treatment through the examination of behavior of newborns and their development. The test is given to full-term infants to 2 months old. The development of an infant is examined over a period. This test may also signal to medical workers of neurological abnormalities. “NBAS includes 28 behavioral items on a 9-point scale, 18 neurological status items on a 4-point scale, and 7 supplementary items on a 4-point scale” (Athansiou et al, 2021, para.2). The creation of the scale began in the 1960s-1970s following research surrounding child development. Brazelton and colleagues established the scale after newborns were found to have behaviors that were complex and individualized, and there was a need for movement observation in newborn behavior. In conclusion, the scale has been proven to be beneficial in its positive effects of the relationship between caregiver and child, mental health of a mother, and child development (Athansiou et al, 2021).

Suzi Tortora & Dance/Movement Therapy

Suzi Tortora has received a doctoral degree in education (Ed.D), is a board-certified dance/movement therapist (BC-DMT), a licensed creative arts therapist (LCAT) and mental health counselor (LMHC), a certified movement analyst (CMA), and is certified as a National Certified Counselor (NCC). Through Tortora’s private practice, *The Dancing Dialogue*, Tortora offers a variety of expertise including the following methods: *Ways of Seeing* Method (a dyadic, trauma-informed method in which Tortora developed herself), Authentic Movement, Movement Analysis, Body-Mind Centering, Mindfulness, and Sensory Integration and Sensory Modulation Therapy. In addition, Tortora has contributed to the research of DMT and has written books such as *The Dancing Dialogue: Using Communicative Power of Power of Movement with Young*

Children (2006), and *Dance/Movement Therapy for Infants and Young Children with Medical Illness* (2023) (Dancing Dialogue, n.d.-a).

Tortora described dance as an integral part of any child's life as a form of their own expression. Tortora states using DMT as a tool to help infants and young children who have medical illness helps patients regain their childhood and expression by providing support for mental, emotional, social, and spiritual effects of an illness (Tortora, 2019).

The use of DMT can help a patient be able to express themselves while also providing the clinician with a better understanding of what the patient may be going through. By use of non-verbal communication, an individual can express the thoughts and feelings that they may not want to verbalize. Tortora believes there is a strong emphasis on body-mind connection while engaging in DMT (Tortora, 2019).

Bonnie Bainbridge Cohen & Body-Mind Centering

Bonnie Bainbridge Cohen has received a Bachelor of Science degree in Occupational Therapy (OT), is a registered somatic movement therapist (RSMT) and registered somatic movement educator (RSME). Cohen has spent many years as an educator in several settings teaching dance, dance therapy, and somatic therapy classes. Cohen has presented her work at somatic psychology programs, and at body psychotherapy conferences. Cohen is one of the founders of an organization, the International Somatic Movement Education and Therapy Association (ISMETA). Cohen is an author of books including *Sensing, Feeling, and Action* (1993), *Mechanics of Vocal Expression* (2015), and *Basic Neurocellular Patterns: Exploring Developmental Movement* (2018). Cohen is the creator of the School for Body-Mind Centering which has been open for over 45 years. She has created several videos that encapsulate her work as a somatic movement therapist and what is taught at Body-Mind Centering.

Body-Mind Centering (BMC) is defined as an “integrated approach to transformative experience through movement re-education and hands-on repatterning” (Body-Mind Centering, n.d.-a, para. 1). Through use of “movement, touch, voice, and consciousness” (Body-Mind Centering, n.d.-a, para. 1), BMC will transform an individual through the application of “anatomical, physiological, psychophysical and developmental principles” (Body-Mind Centering, n.d.-a, para. 1). The study is based upon the theory of body-mind connectivity and expression.

BMC is used by individuals and professionals in the following different settings: “movement, dance, yoga, bodywork, physical and occupational therapy, psychotherapy, child development, education, voice, music, art, meditation, athletics, and other body-mind disciplines” (Body-Mind Centering, n.d.-a, para. 2).

However, for the purpose of this paper, the focus on population will be a particular subsection of BMC named Basic Neurocellular Patterns: Exploring Developmental Movement (BNP). In this work, Cohen’s population focus is on infants and their developmental movement patterns. BNP is written for individuals to have a better understanding of BNP patterning and it provides experientials and thought-provoking questions regarding attunement to the body of the individual or in a dyadic partnership.

The School for Body-Mind Centering offers a course for Infant Developmental Movement which defines itself as:

This program is a highly sophisticated and subtle approach to the observation and facilitation of normal movement patterns in infants. The approach incorporates the child’s curiosity, interest, and individuality into the relationship with the educator. It is child centered, relationship centered, and child oriented, rather than task oriented. It trains

people to recognize early movement patterns and to interact effectively with infants in gentle, enticing ways that will have a positive effect on their growth and development. The goal in movement education with infants is to help set a foundation that supports pathways of ease, strength, agility, and adaptability and to help avoid restrictive patterns of movement that inhibit the development of the full potential of the child (Body-Mind Centering, n.d.-c, para. 5).

Discussion

Effectiveness of Body-Based Therapies & Neuroscience

A caregiver's emotional resonance with the infant's embodied existence is essential to adequate emotional development. Finally, the somatic, nonverbal, intersubjective dialogue begun in infancy continues to be continued unconsciously into adulthood. The capacity of adult patients to address and derive meaning from their bodily-felt experience seems to be positively associated with successful psychotherapeutic outcome (Dosamantes-Beaudry, 1997, p. 528).

Therefore, the expectation of a positive outcome depends on the patient to do more than just go through the motions. They must feel and find meaning in their experience through their own body as a primary tool.

Definition: Dance/Movement Therapy

DMT is a psychotherapeutic treatment, where the body is a cathartic tool. The theory is born from the idea that there is no separation in body and mind. DMT reflects an individual's inner emotions. By witnessing a change in the movement is equivalent to seeing a change in the individual. The goal of DMT is to create a better understanding of ourselves, promote health, and

increase therapeutic growth. DMT provides clients with the ability to express themselves non-verbally and portray ideas and events that are too hard to speak (Levy, 2005).

Although DMT is mainly focused on non-verbal communication, there are times in which verbal communication is used to aid in processing, promotion of social skills, and demonstration of interventions and tasks used in session (Millman et al, 2021). DMT can aid the wholeness of a client in social, emotional, cognitive, and physical levels. According to the American Dance Therapy Association (ADTA), DMT is defined as “psychotherapeutic use of movement to promote emotional, social, cognitive, and physical integration of the individual, for the purpose of improving health and well-being” (ADTA, n.d.-a). DMT is comprised of researched-based practices, which can cultivate attunement between individuals and encourage feelings of embodiment (Crooks & Mensinga, 2020).

DMT has been used gradually more as a treatment to both psychological and physical health with clients with neurological, physical, or mental health illnesses (Millman et al, 2021). DMTs can work in all levels of care, with a variety of medical professionals for collaborative treatment plans and goals. DMTs use practices such as body movement observation to observe an individual to create therapeutic goals and treatment plans for therapeutic change.

Definition: Somatic Movement Therapy

The International Somatic Movement Education and Therapy Association (ISMETA) defines the purpose of SMT as “enhance human functioning and body-mind integration through movement awareness” (ISMETA, n.d., para. 2). SMT is described as practices that include: “postural and movement observations, experiential anatomy and physiology explorations, movement patterning and re-patterning, and communication and guidance through touch, verbal cues, and/or demonstration” (ISMETA, n.d., para. 3). It is important to note that ISMETA does

not describe somatic movement therapists as clinical therapists or counselors and cannot prescribe any pharmaceuticals, or give any diagnosis related to mental health or medical conditions (ISMETA, n.d.).

Body Movement Observation and Analysis

Body movement observation and analysis is an integral part of DMT is used as an asset in any clinical and therapeutic setting. Tortora uses several frameworks to encourage the effectiveness of her DMT such as the BNP and Laban/Bartenieff movement analysis system.

Tortora utilizes the research of Bartenieff and Cohen that is dedicated to developmental movement and motor skills. Bartenieff studied the patterns of developmental movement and created a vocabulary of non-verbal analysis to sequential, developmental movement. Cohen, a student of Bartenieff, studied the memory of movement in the developmental process during the first year of an infant's life. The terminology, "developmental movement patterns" (Tortora & Keren, 2023, p. 49) were used by both the practitioners as they studied an infant's quality of movement determined by "tension, strength, timing, and special orientation" (Tortora & Keren, 2023, p. 49) as well as the progression of movement through neuromotor skills. Bartenieff suggested the movement patterns created from developmental movement sequences, and Cohen organized those patterns sequentially. The body coordinates are as follows: "breath-flow, core-distal, head-tail, upper-lower, body-half, and contralateral body coordination" (Tortora & Keren, 2023, p. 49). Cohen had made a connection between Erikson's Developmental Phases used in psychology with the five developmental motor actions, such as "yield, push, reach, grasp, and pull" (Tortora & Keren, 2023, p. 50). These actions are how the infant moves in response to external stimuli. Cohen's work was later coined BNP, and Tortora has trained with Body-Mind-Centering and incorporated into her DMT treatment.

The developmental movement patterns explored and introduced by Bartinieff, and further expanded upon by Cohen, are used by dance/movement therapists to explore the patterning of an infant's motor and developmental movement. The patterns found in an infant's movement repertoire are then compared to medical conditions and treatment and analyzed how one could be impacting/affecting one another (Tortora & Keren, 2023). A medical illness and treatment provided for an infant could affect their ability to sit up properly on their own, or ability to crawl. With an understanding of a client's movement patterns, medical illness, and treatment goals, a dance/movement therapist can create a plan to implement therapeutic change.

Body Movement Observation and Analysis: Somatic Movement Therapy

Using Bartenieff Fundamentals, Cohen separates BNP into two categories, prevertebrate and vertebrate patterning. Prevertebrate patterns include vibration, cellular breathing, sponging, pulsation, navel radiation, mouthing, and prespinal movement. Vertebrate Patterns are divided into three sections which include spinal, symmetrical (homologous), and asymmetrical (homolateral/contralateral) patterns. Each section is described further into yield/push, and reach/pull. The last pattern of vertebrate BNP includes brachiation and climbing (Cohen et al., 2018).

Clinical Assessment: Dance/Movement Therapy

As described in Tortora's book, *Dance/Movement Therapy for Infants and Young Children with Medical Illness* (2023), assessments used to determine the needs of the client are but are not limited to: *Getting to know Me in the hospital* intake form, Alarm Distress Baby Scale (ABDS), Infant Behavior Questionnaire, Newborn Behavioral Observations (NBO), Brazelton Neonatal Behavioral Assessment Scale (NBAS) and *Dyadic Attachment Non-Verbal, Communicative, Expressions* (DANCE) tool.

Before care has begun, an intake is filled out by the parent to inform Tortora about the client she will be working with. The initial assessment used by Tortora is named *My Body Speaks! Getting to know Me in the Hospital* (Tortora, 2023, pp. 209-213). The intake addresses all personal health information and demographic information. The following section gives insight to a child's non-verbal/body language about how they like to be said hello, when they are uninterested in talking, or when they would like to engage more. The intake asks about the most common feelings, body-cues, transitions, what overwhelms them, how a clinician can support them, and favorite things (Tortora, 2023, pp. 209-213).

Alarm Distress Baby Scale (ADBS) is used by pediatricians in routine check-ups to determine social withdrawal in an infant who is 2 months to 2 years old. Tortora (2023), makes certain that this tool is used as a screening tool and not a diagnostic tool. If this screening tool provides information that the infant is behavior signal alarm, more tests need to be conducted to determine social withdrawal diagnostically. The scale examines the following behaviors and social cues: facial expressiveness, eye contact, activity in head, torso, and limbs, self-stimulating gestural movement, verbal communication, response to stimulation, relationship with others, and attraction (Tortora & Keren, 2023, pp. 139-140).

Filled out by the caregivers of the infant's attending treatment is a widely used form called the Infant Behavior Questionnaire (IBQ). IBQ contains 94 items separated into six categories (activity, smiling/laughter, fear/distress/extended latency, distress to limitations, duration of orienting, soothability). The information collected from this questionnaire is analyzed to explore the infant's positive and negative reactions towards stimuli. The reactions are categorized by initial reaction time towards stimuli, length of time it takes to regulate, and the intensity of the reaction (Tortora & Keren, 2023, p. 66).

The Newborn Behavioral Observations System was created from the Brazelton Neonatal Behavioral Assessment Scale (NBO) and was designed to look at self-regulation in infants through clinical observation. This observation system looks at each infant's personality, attachment, exploration, and relationship through senses and perception. NBO is a tool used to promote caregiver and infant relationships and create insight into non-verbal communication. NBO accentuates the importance of the role of a caregiver as a support to self-regulate particularly when an infant is going through emotional distress during medical illness (Tortora & Keren, 2023, pp. 137-138)

The Brazelton Neonatal Behavioral Assessment Scale (NBAS) is a test that examines infant behavior. The test supports parents in their quest to understand their babies' changes over their first 30 days of life and subsequently the infant's ability to self-regulate through changes in environment. The attunement between baby and caregiver is determined by a caregiver's ability to understand their infant's cues to their six states of consciousness (deep sleep, active sleep, drowsiness, awake alert, alert but fussy, and crying). There is a reflective set standard for a caregiver's reactions to that state of consciousness. An observation of attunement between an infant and a caregiver is compared with the set standard. Tortora has expanded upon the six states of consciousness idea further into child development to understand non-verbal communications in patients named *DANCE* tool (Tortora & Keren, 2023, p. 137).

The Dyadic, Attachment-Based, Non-verbal, Communicative Expressions (DANCE) tool was created by Tortora and Keren (2023) to help practitioners in categorizing patient's non-verbal communications with external stimuli. The assessments described above such as the NBO, NBAS, and ADBS are all acquired for the practitioner to gain a full understanding of the patient and patient's needs. The results from the assessments listed are then recorded on the DANCE

form for the practitioner to create interventions designed for the best support of the patient.

DANCE is separated into 10 categories which include: body, facial expressivity and quality of eye gaze, body shapes, interactional space, quality of movement actions, quality of frequency and touch, tempo and phrasing of nonverbal style, vocal patterns, regulation and co-regulation, and coherence. In the assessment, there is also a focus on behavioral states of a patient which have a focus on transitions, self-regulation, postural movement, and breathing patterns during differing stages of consciousness (deep sleep, light sleep/drowsy, awake, alert, fussy, and crying) (Tortora & Keren, 2023, pp. 141-148).

Assessment: Somatic Movement Therapy

In BNP, the Brazelton Neonatal Behavioral Assessment Scale (NBAS) can be found in the developmental resources. Brazelton (2011) describes NBAS as an assessment that helps determine the relationship between infant and external stimuli such as the environment or caregiver relationship. However, in the written text, there is no evidence shown this assessment was used in treatment of a client to determine therapeutic goals. My research resulted in minimal information about assessments to determine presenting problem or goal. There is an abundance of experientials pertaining to developmental patterns but a lack of information regarding the assessments they use.

In an interview, Cohen describes some insight into what she looks for when observing the movement of an infant. Cohen states:

With babies, people often say, what are you looking for? I'm looking for who the baby is. I'm looking for what they are bringing to me in this moment, because that's the only time that exists, is that particular moment...the other one is, is depending on the age...the first three months, it's a process, the baby is really adjusted to being like us living a life on the

moon or Mars, they have come into a totally new experience, they are breathing differently...it's hard to imagine, except for we have all experienced it...on another level, there's the nursing, the survival things...How was the baby positioned? How did they move in the womb? Were there any difficulties that the womb prevented them from feeling themselves? Or prevented them from fully expressing their full movement potential? (Kemble, 2022, 4:09)

Application: Dance/Movement Therapy

Tortora (2023) depicts how the theory of DMT can be applied in clinical situations to benefit a client or patients in a holistic way while receiving medical treatment in a hospital setting. The DMT techniques she describes through different vignettes in her book, *Dance/Movement Therapy for Infants and Young Children with Medical Illness*, are as listed but not limited to dance-play, body-to-body dialogue, use of multisensory dance/movement psychotherapy, and mirroring.

The use of dance-play during sessions is a way for a client to create their own narrative, and have other participants (parents, practitioners, group members) come with them on their journey. Tortora (2023) describes a patient who entered a group room with their parents and orchestrated a scene of being an army general to several soldiers. As the group took to the client's command with the accompaniment of music therapists in the room, marching together to the beat the client had created. The use of this dance-play scene had been used during every group session while in treatment and created a sense of control, empowerment, and emotional expressivity for the patient (Tortora & Keren, 2023, pp. 26-28).

Body-to-body dialogue is necessary to communicate with infants when they are pre-verbal for self-regulation. In a hospital, some treatments for infants and young children must be

given without their caregivers nearby, thus hospital staff will need to help a patient self-regulate during this time. Tortora (2023) describes using body-to-body dialogue with a patient who was dysregulated as evidenced by heart rate. Tortora removed all additional sensory inputs such as televisions or electronics, took note of her own heart rate and deepened her breaths, and held the patient to model rate of breath. The patient reacted to these stimuli, which prompted Tortora to continue into dialogue, such as verbalizations and swaying motions. The techniques used will help a patient develop their own strategies for self-regulation (Tortora & Keren, 2023, p. 69).

Tortora (2023) has cultivated a multisensory dance/movement psychotherapy (MSDMT) space within the hospital setting. MSDMT is a place where patients and their families can play prior or post treatment. This allows treatment, which is often painful and stressful, to be coupled with something that can cultivate therapeutic benefits. MSDMT can benefit client's therapeutically by strengthening emotional support, enhanced a sense of control, decreased worry and fear, developing coping skills, education regarding pain management, and cultivating ritual surrounding treatment. A client can attend MSDMT while waiting for a treatment to begin to play with a stuffed animal, throw a basketball, watch a movie, listen to a favorite song, and blow bubbles while unknowingly practicing breathing skills. A dance/movement therapist can observe the client and caregivers' interactions and body movement and use that as information to report to medical staff for collaboration. Play, movement, and imagination within a client can hold deeper meaning, cultivating a sense of control and empowerment with their treatment (Tortora & Keren, 2023, pp. 167-169).

Mirroring is commonly used in DMT to build therapeutic attunement and rapport with a client. During a session, a dance/movement therapist will mirror or replicate the quality of movement that the client is demonstrating to relate to that client. A dance/movement therapist

can gain a sense of the response to the mirroring which will then gauge what type of interaction should be instilled next (Tortora & Keren, 2023, p. 49). Mirroring can create attunement and empathetic connection between a client and a practitioner (Winters, 2008). The therapeutic relationship is strengthened by creating a physical and emotional connection through the activation of neurons (Winters, 2008).

Application: Somatic Movement Therapy

In BNP, the book includes several experientials and video formats of these experientials to help understand each individual prevertebrate and vertebrae pattern. Each set of experientials has a reflection piece to gain more insight into the comfort and awareness of the body (Cohen, et al., 2018).

In this book, each of the BNP is viewed from the standpoint of normal development. They can be applied to anyone at any age of life to analyze areas of movement efficiency/inefficiency and to improve one's proficiency of movement. If any pattern becomes overly dominant, it may prevent other patterns from emerging. By exploring all the patterns, weakened patterns can be strengthened and dominant patterns modified. This will allow the overly dominant pattern to integrate into the total matrix of development, thereby allowing more mature behavior to emerge (Cohen, et al., 2018, p. 22).

A client is assessed by the completion of all developmental patterns. A practitioner determines which developmental patterns are weak and strong. A treatment plan is created to strengthen the weaker developmental patterns and create change in more dominant movement patterns.

My research resulted in minimal information about practical applications towards any presenting problem or goal. There is much information about developmental patterns, including

experientials surrounding the exploration of each developmental pattern but a lack of information about application.

Cohen is interviewed about her work with infants that provides a bit of insight into how a client is assessed, and how goals and plans are created. Cohen states,

If you don't see a movement in a baby, there are some movement limitation(s)...Is it a movement limitation due to birthing issue? Is it a position in the womb?... (baby) has a foot, called club foot...if you just stimulate it, if you brace it it's still not moving, it's just another position, where if you give them the stimulation, that they were not able to have because they were unable to move it, they will move it, and then you have to travel it through the whole leg and it actually goes into the kidneys and into the spine (Kemle, 2022, 1:19).

The quote above describes Cohen's strategy of working with a young infant with a lack of mobility in one foot through tactile stimulation.

How To Specialize in Theory and Application

To become a registered dance/movement therapist, one must complete a program which the American Dance Therapy Association (ADTA) has accredited. The ADTA describes a registered dance/movement therapist as someone who "signifies both the first level of entry into the profession and the individual's preparedness for employment as a dance/movement therapist within a clinical and/or educational setting" (ADTA, n.d.-b). Other requirements are as follows: movement background and experience, master's degree from an accredited program, completion of clinical and DMT courses, experience working in the clinical field, and a supervisor who is a board-certified dance/movement therapist. To earn a master's degree at Lesley University in clinical mental health counseling, specializing in dance/movement therapy is 60 credits over a 3-

year period. In addition, a student must complete 2 internships and 1 practicum totaling 1,160 hours. Of those hours, 450 hours must be direct client care. A student who completes this program will earn their registered dance/movement therapist (R-DMT) qualifications.

In contrast, to be a registered somatic movement therapist, an individual must participate in a 250-hour or 500-hour ISMETA approved program. Cohen's School for Body-Mind Centering is a program approved by ISMETA to become an SMT.

Through the School of Body-Mind Centering, to be qualified to practice BMC, one must enroll to complete a 500-hour somatic movement education program which can be done in two years. Completed courses for the program are as follows: Basic Neurocellular Patterns, Endocrine System, Fluid System, Ligamentous and Fascial System, Muscular System, Nervous System, Ontogenetic Development, Organ System, Primitive Reflexes, Righting Reactions, and Equilibrium Responses, Professional Issues 1, Senses and Perception 1, Skeletal System, and Somatic Movement Education Competency (Body-Mind Centering, n.d.-d).

The School of Body-Mind Centering, Cohen offers a program called Infant Developmental Movement Education (IMDE). To become certified in IDME one must completed these courses as follows: Basic Neurocellular Patterns, Ontogenetic Development, Primitive Reflexes, Righting Reactions, and Equilibrium Responses, Senses and Perception 1, Infant Developmental Movement Education 1, and Infant Developmental Movement Education 2. To be certified to teach IMDE, one does not have to be a SMT (Body-Mind Centering, n.d.-c).

Comparison of DMT and SMT

DMT has more of a clinical approach to working with a client. A DMT can work collaboratively with other medical staff, to create a plan for a client. A DMT also has a component in treatment where an individual can use talk therapy to discuss any pertinent

feelings, or what came up for them in the session. SMT is a focus on taking patterns in a corrective form. To me, it feels like SMT takes on the role of an occupational therapist, or physical therapist. Regarding body movement observation and analysis, I found that there are a lot of similarities between DMT and SMT. For one, both Cohen and Tortora use Laban Movement Analysis, and Bartenieff Fundamentals. My most interesting finding was that Tortora studied with Cohen, who studied with Bartenieff, who studied with Laban. There appears to be a direct line through each practitioner and the way they view body movement in their clients. When examining assessments, DMT has a more clinical approach to their creation of their treatment plan and goals to delineate progress. SMT is described as more of an experimental approach in the way goals are formed with a client. . In the matter of each therapy's application, both DMT and SMT have an experimental approach to applying a client's goals using creativity and flexibility. A DMT enters each session with a treatment plan and goals for the client, but also with flexibility to pivot from the plan in case it is not working. A SMT will observe a client to determine what patterns are strengths, and what are weaknesses- a plan is then created to modify the strengths and strengthen a client's weakness. A DMT has in mind a therapeutic goal while entering a session, where a SMT has a systematic, task-oriented plan. A question that deserves further research is how does an SMT measure progress? How does the therapist know if the therapy is working or not?

The main difference between an SMT and a DMT is the amount of education needed to work within the body-based therapies. The amount of education a DMT needs to work within the medical field makes sense in comparison to a SMT who cannot diagnose individuals or aid with any previous or undiagnosed mental health illness. A DMT can do the work of an SMT, but the

reverse is not an option for an SMT, unless they receive the required amount of education listed above.

Safety of the Client during Body-Based Therapies

To provide body-based therapies, one must be qualified to hold the client safely if there is trauma that is being brought up through a body-based therapy session. My question is, what is the protocol for when a somatic movement therapist is conducting a session and trauma is triggered through movement? How can a practitioner safely allow a client to transition from session to outside of the session when experiencing dysregulation? What are the ethics to SMT regarding treatment with individuals who have experienced trauma, or individuals with undiagnosed mental illness? Are they turned away or given a referral? Does a DMT refer to a SMT, or vice versa? How can we work conjointly for continuity of care?

As a future dance/movement therapist, I need to be explicit in what services I can provide for a client who is seeking to experience body-based psychotherapy. Albeit other body-based therapies should be held to that same standard and be explicit about what services can be provided. According to Gray (2017), there is a connection between trauma and its reaction to a stress response- fight, flight, freeze, fawn- and its ability to mobilize or immobilize an individual. Thus, making the connection between trauma, stress response, and bodies. Gray states, “when these bio-emotional reactions to a traumatic exposure leave long lasting imprints, resulting in states of traumatization and/or clinical diagnoses of post-traumatic stress disorder, the state-shifts that occurred are also central to the restorative process” (Gray, 2017, p. 44).

During an interview at American Dance Therapy Association Conference, Dr. Stephen W. Porges (2017) explains the association between DMT and polyvagal theory. In the interview, Porges makes a point that dance and play both activates “neural exercise” (Devereaux, 2017, p.

31). Once the brain understands that the activity creates safety in the client, it creates a shift in physiological state. This state can shift between safety and survival, however, dependent on the actions of the individuals in session, such as therapists and other group members (Devereaux, 2017). A dance/movement therapist is trained to understand the nonverbal cues they give and receive, the dynamics of group processes, and maintain the safety of group members.

Cohen specifically is an occupational therapist and would have the clinical skills to deal with trauma/dysregulation. For ISMETA approved programs, there are no pre-requisites required- only a love for movement, and a desire for personal, and professional growth. Regarding comparing DMT with SMT- something so close in title/name, could not be any more different.

Conclusion

The reason for this research was to explore my understanding of the difference between body-based therapies and my own specialization, dance/movement therapy. At the start of my research, I felt that my topic was too large, and overwhelming, so I decided to narrow it in to focus on only two body-based therapies, DMT and SMT. After I narrowed my topic inward, finished the research, I found that I have made it full circle back at my original thesis topic.

Another discovery I had made was navigating around the different nomenclature of body-based therapies. Firstly, there are body-based psychotherapies, and there are also just body-based therapies. The difference between the two is highly important. There are body-based psychotherapies such as somatic experiencing or somatic psychology in which an individual does need to have a clinical background to provide the service. Then there are body-based therapies such as SMT , which is more of a movement-based patterning system to help understand our bodies and the way we move them. There is a vast range of body-based psychotherapies, and

therapies out there for clients, each with its own advantages and disadvantages. I strongly encourage the searcher of these therapies to make sure they fully understand what service they are enrolling in.

In a book review of Ruella Frank's book *Body of Awareness: a somatic and developmental approach to psychotherapy*, Bloom (2009) discusses what and why of somatic psychotherapy regarding developmental patterning:

The 'infant' developmental patterns function in the moment-to-moment process of adult experiencing. Habitual disrupted movement patterns are implicated in what gestalt therapists call interruptions to contacting, unaware inhibitions or restrictions on a person's capacity to make optimum choices in his or her life, to feel and to thrive most fully and harmoniously (Bloom, 2009, p. 168).

I am curious to know the application of Frank's work comparative to Tortora or Cohen. Even after this research I am still left with unanswered questions.

The holes in the research include further exploration into DMT and SMT's conceptual ideas on embodiment and sense of self. My thesis could only encompass a few topics before it exceeded the limit. I wish to further my research on somatic psychology in the future. I will make note that what I could find on Cohen's application and assessment was limited in the main piece of text that I had for this research.

In conclusion, by comparing Cohen and Tortora's work, I found that Tortora is a certified practitioner of Body-Mind Centering, thus Tortora's work is inherently Cohen's work. Tortora has taken Cohen's work and created a clinical psychotherapeutic aspect to her work.

Sense of Self

My understanding of DMT compared to other body-based therapies is that I now have more of an understanding of what DMT can provide and more of what SMT can provide. I can hold space for those who are experiencing triggers through movements in their bodies. I can diagnose and provide clinical therapeutic change for a client of any age. I can use extensive assessments to make the best treatment plan for a patient all while collaborating with a medical team. I can cultivate empowerment and sense of control in an individual who may feel like control was never theirs to begin with. As a future dance/movement therapist, I can use Cohen's extensive work as a tool to better understand my client all while providing safety in a clinical way. I understand the importance of being able to convey what I can do as a dance/movement therapist and what I can offer. My own sense of self feels more grounded in my future work, and I am happy to be here.

In further thought, I would have to question why I even feel the need to blend somatic and DMT in my future career? Does this feeling feel like inadequacy? Do I feel like I need to be better prepared? Do I feel like I have enough tools in the tool kit that is my own body and lived experiences? Vulcan (2013) designed a research project examining the relationships between dance/movement therapists and professional identity. The research concluded that DMT's do find additional accreditation and certifications in other somatic therapies for reasons which include higher pay in public spaces and more well-known to communities outside of the DMT space. A dance/movement therapist reported not using diagnostic tools that were taught to them in their program. Will I use dance and movement to investigate my ethical dilemmas? Will I use dance and movement in a session with my supervisor to explore my feelings about the last

session with my client? Will I use movement in between sessions to help cultivate transitions and ground myself.

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THESIS APPROVAL FORM

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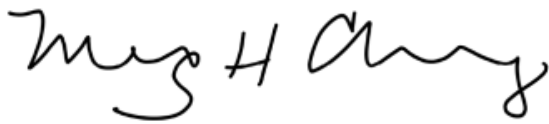
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In the judgment of the following signatory this thesis meets the academic standards that have been established for the above degree.

Thesis Advisor: _____ Meg H. Chang, RdD, BC-DMT, LCAT, NCC _____

A handwritten signature in black ink, appearing to read "Meg H. Chang", written in a cursive style.