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A Dance/Movement Therapist's Perspective on Self-Regulation With Autism Spectrum Disorder and Intellectual Disability

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A DANCE/MOVEMENT THERAPIST'S PERSPECTIVE ON SELF-REGULATION
WITH AUTISM SPECTRUM DISORDER AND INTELLECTUAL DISABILITY

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Abstract

This clinical case study explores my understanding of self-regulation and the impact it had on my clinical decision-making while in dance/movement therapy (DMT) sessions with a client diagnosed with autism spectrum disorder (ASD) and intellectual disability (ID). I was motivated by the interactions I had at my internship while working with this client. For the purpose of this study, I chose the theoretical lens of Daniel Siegel's theory of self-regulation. Self-regulation is a process that organizes the mind and the body in space (Siegel, 2015). Currently, there is research on working with self-regulation and adults with ASD and ID, but there is limited research specifically using DMT as the means of facilitating and aiding in the self-regulation process.

The primary question guiding my case study was: how does my understanding of self-regulation influence my clinical choices in DMT sessions with a client who has co-occurring diagnoses of ASD and ID? Through charting my clinical decision-making process, my DMT interventions, and client responses, I synthesized data through highlighting patterns and themes related to self-regulation. I observed patterns of mirroring and attuning with this client to successfully aid in the self-regulation process. My clinical choices involved rhythmic awareness and exaggeration of breath. In the self-regulation process, my clinical choices helped this client to organize his body and to regulate, control, and calm his movements and vocalizations.

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Introduction

While working with a nonverbal client at my internship site, I noticed we frequently engaged in what I considered to be a self-regulatory process during our *dance/movement therapy* (DMT, see Appendix A) sessions. This client was an adult with diagnoses of autism spectrum disorder (ASD) and intellectual disability (ID). Through working with him, I noticed patterns and recurring themes developing in our weekly sessions. These themes of rhythm and breath appeared to be regulatory for him, and I wanted to examine them further through this clinical case study. I was interested in how my facilitation of our DMT sessions had an impact on his *self-regulation* (see Appendix A) process. The *therapeutic movement relationship* (see Appendix A) in our sessions was one way in which I was able to gain insight into how DMT and my intervention choices related to his self-regulation.

This study deepened my understanding of the interventions and clinical choices I made when working with this client regarding self-regulation. Through this study, I am contributing evidence that supports the impact that DMT has on the self-regulation process in adults with ASD and ID. I am providing a new perspective to the fields of DMT, ASD, and ID and offering a description of interventions and their effects while working with a client at my internship site. I explored what I perceived as self-regulation during my sessions with one individual and my observations during those moments. This exploration into my sessions provided insight into my clinical choices and their impact on my client.

I noticed my biases and assumptions surrounding my intervention choices regarding self-regulation, and I wanted to look deeper into these choices. I began to gain a better understanding of what my perceptions in therapy sessions were by first learning more about self-regulation and how it manifests through body actions. This study challenged me to acknowledge my biases and assumptions regarding self-regulation. My biases about self-regulation included the following: it always involves breath, it is usually observable in an

individual's body and posture, and it is impacted by one's external environment. While these biases may or may not be accurate, they are the assumptions that I had as I began this clinical case study. Through the process of this study and identifying my biases, I developed a greater understanding of self-regulation and my style of working as a dance/movement therapist.

Self-regulation is a process that organizes the mind and body in space (Siegel, 2015). It is unique to each individual and aids in returning the body to a place of homeostasis, involving both the brain and the body as an interconnected system. Adaptive self-regulation involves the stabilization and integration of an individual across emotional, physical, and cognitive levels (Seoane, 2016). Knowing this led me to examine how I could help facilitate the self-regulation process with a nonverbal individual diagnosed with ASD and ID. In this study, I focused on my intervention choices around self-regulation and what informed them.

The primary clinical question guiding my study was: how does my understanding of self-regulation influence my clinical choices in DMT sessions with a client who has co-occurring diagnoses of ASD and ID? Secondary questions that helped me to better understand this case study and my observations were: how do I know that this client is experiencing self-regulation? What in the client's body demonstrates self-regulation? What interventions do I use when I am perceiving self-regulation? How does the client respond to my interventions to let me know that it was beneficial for him and related to his self-regulation process?

Theoretical Framework

While working with this client, I took notice of my theoretical framework and how it impacted our interpersonal relationship as it related to self-regulation. My choices to incorporate both cognitive-behavioral therapy (CBT) and DMT—along with an existential-humanist approach—allowed me to better understand and communicate with this individual

while also tracking any shifts or changes I noticed in his body actions. It offered insight into new ideas of incorporating interventions or introducing new stimuli in our sessions together.

Counseling theory. For the purpose of this study, I utilized an existential-humanistic approach to counseling in combination with components of cognitive-behavioral therapy (CBT). A CBT approach allowed me to clearly measure the behavioral changes I observed with this client. I was able to use CBT, which was helpful in clearly tracking client responses, while still maintaining a person-centered focus. My main concern while working with this client was maintaining a person-centered focus to better understand him as an individual and to discover how to best connect with him nonverbally. The combination of an existential-humanistic approach in conjunction with a person-centered focus allowed me to help this client make sense of his world while managing symptomology (Ivey, Andrea, & Ivey, 2012).

Using CBT, I noted observable behaviors and client responses (Ivey et al., 2012). When an individual does not have the ability to communicate in the typical, verbal way, the language of the body becomes the key to experiencing the world and communicating that experience to others (Tortora, 2006). CBT is primarily focused on an individual's observable behaviors and their response to interventions (Ivey et al., 2012). When utilized properly, CBT treats the whole person; it is not just about symptom reduction (Lazarus, 2013). CBT has been proven effective with various populations and has produced significant changes for various individuals (Ivey et al., 2012). CBT with individuals with ASD and ID is adapted to meet the goals and needs of the person; it works to help an individual set a long-term goal and then identify the specific steps necessary to reach that goal in an attainable manner (Creed, 2015).

While there is evidence that CBT and *applied behavioral analysis* (see Appendix A) are effective treatments for addressing challenging or maladaptive behaviors, these methods

do not necessarily examine the internal processes of the person (McClure et al., 2009). In uncomfortable or stressful social situations, problem-focused coping strategies have not been shown to alter the inevitable feelings of distress and discomfort from negative social interactions (Hartley & MacLean, 2008). Instead, creating a support system made up of supportive staff members, therapists, housemates, and family members has proven beneficial for adults with ASD and ID in establishing relationships with others and creating the foundation and space for an individual to implement effective coping skills (Hartley & MacLean, 2008). In a person-centered approach to counseling, the therapist must be empathic and have an understanding of what therapeutic style would work best for the client; this is done through developing a therapeutic relationship (Ivey et al., 2012).

This eclectic approach was especially useful when working with a nonverbal client who was not able to speak to his thoughts. Regardless of which theory a counselor works from, understanding a client's worldview is always a priority and an important part of developing the therapeutic relationship (Ivey et al., 2012). A client's worldview includes their beliefs and values and the understanding of their environment based on their history (McClure et al., 2009). In order to meet individuals where they are, a counselor must focus interventions on the body and mind through the development of interpersonal relationships in therapy sessions (Siegel, 2015).

Dance/movement therapy theory. I utilized DMT during sessions with this client because it is based upon the body/mind connection. In DMT, "dance and movement are utilized as a way to the unconscious and as a facilitator of different aspects of health and well-being" (Chaiklin & Wengrower, 2015, p. xxxi). By using the body-mind connection and nonverbal communication, dance/movement therapists can be effective in working with this population in ways that traditional forms of talk therapies cannot (American Dance Therapy Association [ADTA], 2016). With traditional forms of talk therapy, individuals with

a severe or profound ID may not benefit from solely using language during a therapy session (Sheehy & Nind, 2005). DMT incorporates present moment movement in the body to provide connection and to promote growth and healing in the mind (ADTA, 2016). DMT integrates sensations, perceptions, and cognitions to promote both intrapersonal and interpersonal development (Fischman, 2009). In addition, DMT taps into the nonverbal dialogue with an individual by engaging in and with movement dialogues expressed through the body (Fischman, 2009).

Specifically, I incorporated the theory of Marian Chace, a pioneer in the field of DMT, into my work (Sandel, Chaiklin, & Lohn, 1993). The Chacian approach to DMT involves the four elements of body action, symbolism, rhythm, and the therapeutic movement relationship (Chaiklin & Schmais, 1993). When working with this client, I often incorporated rhythm in our sessions by bringing awareness to his body action. I mirrored his body actions and internal and external rhythms within our therapeutic movement relationship through reflecting his movements back to him. *Mirroring* (see Appendix A) within the therapeutic movement relationship is a way to validate an individual's present moment experience through taking their "nonverbal and symbolic communications and helping to broaden, expand, and clarify them" (p. 22) in order to meet the individual where they are (Levy, 2005). According to Marian Chace, "rhythmic action in unison with others results in a feeling of well-being, relaxation, and good fellowship" (Sandel et al., 1993, p. 196). Moving together rhythmically acts as a connection between individuals.

The structure of a typical Chacian DMT session involves a warm-up, theme development, and closure (Levy, 2005). I integrated the structural aspect of a typical Chacian format through incorporating a ritualistic beginning, fluid middle, and set end in each of my sessions with this client. The development of a Chacian session promoted organization and a feeling of comfort for this client as he knew what to expect each week. It set a standard for

us to further build and develop together in our work through DMT. The Chace technique “utilizes dance movement as its predominant mode of interaction, communication, and expression” (Levy, p. 23, 2005). Chace technique combined with CBT helped me to track my client’s progress and provided a structure to help create stability within our sessions. Through my theoretical framework, I determined a clinical case study would allow me to better understand and document my clinical observations during sessions.

Clinical Case Study

The methodology I implemented was a clinical case study because it helps to communicate and provide understanding of therapeutic ideas (Fonagy & Moran, 1993). According to Creswell (2013), a case study examines a specific case to provide an in-depth picture of information and a more detailed understanding. A clinical case study tells the story of a unique case, includes multiple forms of data, and directly relates to the client’s treatment goals (Cruz & Berrol, 2012). This methodology directly supports exploration of my clinical questions and creates a framework that fits with my therapeutic approach.

I chose to look at my interventions and clinical choices I made when working with this client. I was able to develop an understanding of the impact my interventions had on self-regulation for this client based on his responses. I met with this client for 30-minute individual DMT sessions once per week. Sessions took place at a day programming site at my internship. I recorded data from sessions with this client for seven weeks. Data collection took place in a cubicle at my internship site immediately following the individual session.

To gather information from sessions with this client, I created an observation-response chart (see Appendix B). In my charting, I identified the initial noticing of my client’s movement that prompted my intervention. Then, I identified the intervention that I chose to implement with this client. I recorded his response to my intervention, and then I

reflected upon the overall phrase of events (the initial observation, the intervention, and client response). I reflected on how I understood the overall phrase of events to relate to his self-regulation process, specifically defining it through Siegel's lens of self-regulation. From working with this client for an extended period of time, I was familiar with his movement repertoire and his methods of self-soothing.

I validated the evaluation of my data and how I analyzed it through regular clinical supervision and meeting with the research coordinator at Columbia College Chicago. I concretely defined self-regulation, and only looked at what information in my chart specifically related to self-regulation for this client. A clinical case study is not research; therefore, I was able to continue working with this client at my internship site and maintain my role as therapist. I documented in my observation-response chart immediately following sessions with my client in order to remain in the present moment with him during our sessions.

This study was so important to me because there is a history of not seeing individuals with an ID as equals; therefore, they often do not receive the same benefits and services granted to many typically-developing, able-bodied people (Sheehy & Nind, 2005). Because of this history, the research pool of studies working with this population is somewhat small. I chose to focus on adults with ASD and ID because the research and advocacy is more limited than for children with ASD and ID.

Literature Review

Current research states that adaptive self-regulation involves the stabilization and integration of an individual across emotional, physical, and cognitive levels (Seoane, 2016). According to Siegel (2015), it is essential to focus interventions on the individual's functioning of the brain, the individual's body as a whole, and the individual's relationships in order to help with self-organization. DMT uses movement as a means to promote the integration of the emotional, physical, and cognitive parts of the individual to facilitate this process (Seoane, 2016). Seoane (2016) stated that "self-regulation is important to psychotherapy in general but is also supportive of dance/movement therapy's fundamental goal of facilitating a client's integration" (p. 35). Furthermore, the ADTA (2016) stated that DMT has been proven effective for individuals with "developmental, medical, social, physical, and psychological disabilities" (para. 4). Thus, this study examines the use of DMT to facilitate self-regulation with an individual diagnosed with ASD and ID.

Both ASD and ID are neurodevelopmental disorders (American Psychiatric Association [APA], 2013). Co-occurring ASD and ID are associated with increased social and communication impairments, a higher frequency of restricted repetitive behaviors, and long-term challenging behaviors (Cervantes & Matson, 2015). The Center for Autism Research (2016) stated that only about 10% of individuals with ID have ASD, but about 38% of individuals with ASD also have ID. Scientists are still trying to determine if there is a genetic link between ASD and ID (Center for Autism Research, 2016).

Adults with Autism Spectrum Disorder

According to the Center for Disease Control and Prevention (CDC, 2016), ASD is "a developmental disability that can cause significant social, communication, and behavioral challenges" (p. 1). In order to meet criteria for full diagnosis, individuals must have symptoms present in early childhood, which must cause clinically significant impairment

(APA, 2013). An individual with ASD may express and communicate with others in a way that is seen as atypical or maladaptive, especially to those not familiar with that individual (Autism Speaks Inc., 2013).

Restricted repetitive behaviors, including insistence on sameness and repetitive motor behavior (Factor, Condy, Farley, & Scarpa, 2016), are key features of ASD (APA, 2013). Furthermore, restricted repetitive behaviors are seen as a possible anxiety reduction strategy for individuals with ASD (Factor et al., 2016; Joosten, Bundy, & Einfeld, 2009). Anxiety is common amongst individuals with ASD (Factor et al., 2016; Kim, Szatmari, Bryson, Streiner, & Wilson, 2000) and may be triggered by a disruption or change in an individual's routine (Ozsivadjian, Knott, & Magiati, 2012), which causes a break within the individual's insistence on sameness (Factor et al., 2016). Common themes of insistence on sameness and repetitive motor functioning as coping skills are also observable in individuals diagnosed with ID (Reynolds, Zupanick, & Dombeck, 2013).

Adults with Intellectual Disability

There are many discrepancies between researchers about the definition of ID (McClure, Halpern, Wolper, & Donahue, 2009). The Diagnostic and Statistical Manual of Mental Disorders (2013) describes ID as the presence of both intellectual and adaptive functioning deficits. To meet full criteria for ID, a person must experience difficulty in experiential, social, and academic learning (Reynolds et al. 2013). Individuals with ID may experience impaired motor functioning; cognitive and memory impairments; and difficulties communicating with others, understanding the results connected to their actions, understanding social norms and rules, and problem-solving independently (CDC, 2012). There is no single cause of ID, but—in many cases—the intellectual disability develops before birth (CDC, 2012).

In order to meet criteria, the onset of intellectual delay must begin in childhood, but symptoms generally last throughout a person's entire life (APA, 2013). Usually, the greater the severity of the disability, the earlier signs are noticed in the individual, although it may be difficult to diagnose ID in early development (CDC, 2012). Many people with ID may experience challenges emotionally and socially when interacting with others (Reynolds et al., 2013). Oftentimes, when in stressful social situations, adults with ID will use maladaptive coping strategies to manage the uncomfortable situation (Hartley & MacLean, 2008). This study examines adaptive behaviors through self-regulation.

Self-Regulation

For the purpose of this study, self-regulation is examined through the theoretical lens of Daniel Siegel's theory. According to Siegel, self-regulation is a process that systemizes and organizes the mind and body of an individual (Siegel, 2015). Self-regulation can be broken down into two main categories—emotions and behaviors—both involving sensory experiences and thoughts (Stosny, 2011). Furthermore, signals from our body, including but not limited to, muscle tension, fatigue, shifts in facial expressions, changes in heartbeat, breath, and digestion influence our emotions and provide us with feedback into our body state (Siegel, 2015). Awareness of these bodily shifts informs our awareness cognitively, emotionally, and physically (Siegel, 2015). Self-regulation involves an interconnected system that includes an individual's brain, their entire body, and their relationships with others (Siegel, 2015). The brain is involved in the self-regulation process as it “coordinates perceptions with memory and behavior” (p. 158) while parts of the brain, like the amygdala, are sensitive to social interactions (Siegel, 2015).

The brain can be divided into two hemispheres when considering neurological functioning and tasks (Siegel, 2015). The left hemisphere and the right hemisphere are anatomically separate and function very differently from one another (Siegel & Bryson,

2012). These two hemispheres are often referred to as the left brain and right brain, with the left brain controlling order and linearity and the right brain sending and receiving signals to aid in emotional understanding and nonverbal communication (Siegel, 2015; Siegel & Bryson, 2012). The two hemispheres are connected by the corpus callosum, which is a “bundle of fibers that runs along the center of the brain” (Siegel & Bryson, 2012, p. 18). A strong connection between the two hemispheres and utilizing the whole brain allows space for fluidity and flexibility when dealing with stressful situations, directly impacting the self-regulation process (Siegel & Bryson, 2012). The “horizontal integration” of the two hemispheres through the corpus callosum is an important aspect in the development of interpersonal relationships (Siegel & Bryson, 2012, p. 18).

Similarly, the brain can be viewed vertically as it functions moving from the lower parts of the brain, including the brain stem and limbic region, to the upper part of the brain, which is made up of the cerebral cortex (Siegel & Bryson, 2012). The lower brain is considered to be “more primitive” by scientists because it controls basic bodily functions, instinctual reactions, and emotional responses (Siegel & Bryson, 2012, p. 38). The upper brain is thought to be more advanced when compared to the lower brain (Siegel & Bryson, 2012). The upper part of the brain is responsible for “sound decision-making and planning, control over emotions, self-understanding, empathy, and morality” (Siegel & Bryson, 2012, p. 40). When integrating the lower region of the brain with its upper counterpart, the functioning of the brain becomes “vertically integrated,” moving through the brain stem and limbic region up to the cerebral cortex, allowing for more control in the brain and body (Siegel & Bryson, 2012, p. 40). This bottom-up processing promotes self-regulation in individuals through the calming and understanding of strong reactions and impulses (Siegel & Bryson, 2012).

Through integrating the left and right hemispheres of the brain while also connecting the lower and upper parts of the brain, we are able to foster and grow our relationships with others (Siegel & Bryson, 2012). Understanding of interpersonal relationships and connections with others begins to develop early in life through secure attachments with parents and close caregivers (Siegel, 2015). Secure attachments involve relationships between parent and child, where the parent is “emotionally available, perceptive, and effective at meeting the child’s needs” (Siegel, 2015, p. 116). These relationships begin during the developmental stages of life (Siegel, 2015). Adults who experienced secure attachments during childhood are able to adapt, self-reflect, and access memory more fluidly than individuals who had an insecure attachment (Siegel, 2015). These individuals are often more confident and able to communicate more effectively with others (Siegel, 2015). The attachment style developed during infancy and childhood strongly impacts an individual’s self-awareness and their ability to self-soothe, influencing their ability to self-regulate (Siegel, 2015).

In addition to an integrated brain and secure interpersonal relationships to aid in the self-regulation process, Siegel discusses the role of mindsight. Mindsight is the ability to understand “our own mind as well as understanding the mind of another” (Siegel & Bryson, 2012, p. 93). According to Siegel (2015), “the mind is the process that regulates the flow of energy and information, and it is both embodied and relational” (p. 269). In order to regulate ourselves, we employ the use of our nervous system and our relationships with others (Siegel, 2015). We relate to one another both verbally and nonverbally through taking in sensory information (Siegel & Bryson, 2012). One way in which sensory information can be integrated into the body is through a process called SIFT (Siegel & Bryson, 2012). SIFT supports the sensory experience of an individual through bringing an awareness to and integrating body sensations, visual images, internal feelings, and cognitive thoughts to gain a

better understanding of their mindsight, thus impacting their self-regulation process (Siegel & Bryson, 2012).

Many adults with ASD and ID have a difficult time regulating an emotion they are experiencing and often have trouble implementing coping skills (McClure et al., 2009). Self-regulation is the ability to be aware of and manage attention, feelings, thoughts, and behaviors (Elliot & Gonzalez-Mena, 2011). Adults with ASD and ID may experience psychological distress and discomfort when experiencing uncomfortable social interactions with others and may use ineffective and maladaptive coping strategies (Hartley & MacLean, 2008). When an individual is in a state of distress, how others respond impacts how that individual regulates and understands the emotion present (Elliot & Gonzalez-Mena, 2011). The building of secure relationships is crucial in the developmental process to encourage and promote positive regulation in the future through the ability to stay calm and focused, problem-solve, and communicate effectively (Tortora, 2006). A secure attachment reinforces an individual's confidence and openness to communicate with others while also promoting flexibility in how they are able to regulate their emotions and experiences with others (Siegel, 2015).

The ability to modulate and shift arousal levels allows an individual to move into a state of calm when experiencing a feeling of dysregulation (Paris & Murray-Slutsky, 2010). Research shows that self-regulation is a skill that is necessary for the emotional well-being of any individual (Stosny, 2011). When individuals are regulated, they are able to adapt to changes in the environment and maintain focus and attention to respond to their surroundings in a healthy way (Paris & Murray-Slutsky, 2010). The brain plays an instrumental role in aiding the self-regulation process. According to Siegel and Bryson (2012), "the brain is set up for interpersonal integration" (p. 122). Specifically, the amygdala helps to aid in the

process of connecting internal sensations with external experiences involving others (Siegel, 2015).

The role of the amygdala. The amygdala acts as a central point in the brain that both sends and receives signals from what is happening outside of the body and the internal emotional response to stimuli (Siegel, 2015). Results from Wagner and Heatherton's (2013) self-regulatory depletion study revealed that self-regulation and emotional regulation were interconnected through the amygdala. According to Siegel (2015), the amygdala has a large role in the understanding of memory and behavior, both of which are influenced by interactions with others. The brain is broken up into three distinct parts that work together in harmony (Levine & Kline, 2008): the neocortical (Levine & Kline, 2008) or upper brain (Siegel & Bryson, 2012), the midbrain, and the lower brain (Levine & Kline, 2008; Siegel & Bryson, 2012). The amygdala is housed in the lower half of the brain, and it is responsible for "innate reactions and impulses, and strong emotions" (Siegel & Bryson, 2012, p. 39) that may take place in the body.

The amygdala changes structurally throughout a person's life, depending on one's experiences and how the resulting learned information is encoded in the brain (Adolphs, 2010). The amygdala acts quickly to process and express emotions (Siegel & Bryson, 2012). Maintaining some sense of control over emotions is an important aspect of human socialization, and an inability to regulate mood may result in unsafe or harmful behaviors (Wagner & Heatherton, 2013). The amygdala is the part of the brain that allows the body to move into action before conscious thought, instinctively acting from the body and then processing what happened in the mind (Siegel & Bryson, 2012). A balance between external stimuli and internal sensations or needs is required in order for an individual to experience self-control (Singer, 2016). According to Singer (2016), self-control—a developed attribute—is necessary for an individual to fully integrate into a community and successfully

interact with the world. Emotions serve as a connection from the mind to interpersonal relationships with others (Siegel, 2015).

Functions of emotions in self-regulation. According to Siegel (2015), “emotions both are regulated and perform regulatory functions” (p. 147). Emotions require categorization and meaning-making in our minds in order to function as experiences in social reality (Barrett, 2017). According to Barrett (2017), emotions “are constructed in the brain of a perceiver” (p. 132). Sroufe (1996) described emotion as a reaction to a particular event that created a physiological shift and a behavioral change in the body. The meaningfulness of a body response or an internal emotion varies from person to person, and it depends on the perception and understanding of emotions (Barrett, 2017). Emotions are the ways in which we connect with others and create interpersonal relationships, whether they are a shared experience or not (Siegel, 2015). Emotion contagion is one way in which we begin to connect with others and sense how they are feeling after being in close contact with them for a long period of time (Sifferlin, 2017). Similarly, *kinesthetic empathy* (see Appendix A), which refers to an emotional awareness of an individual based on their movement and connecting with another individual nonverbally, is used in DMT (Levy, 2005).

Dance/Movement Therapy with ASD and ID

There is a significant amount of research in the field incorporating DMT with individuals with ASD and ID. I am choosing to focus on research utilizing DMT with adults with ASD and ID and not children with a similar diagnosis. According to Siegel (2015), it may be essential to focus self-organization interventions on an individual’s functioning of the brain, the individual’s body as a whole, and the individual’s relationships. DMT uses movement as a means of promoting integration of one’s emotional, physical, and cognitive functioning (Seoane, 2016). Seoane (2016) stated that “self-regulation is important to psychotherapy in general but is also supportive of DMT’s fundamental goal of facilitating a

client's integration" (p. 35). Movement allows for a deeper understanding of oneself and for more opportunities to interact with others through the use of a universal language, which is the movement itself (Erfer, 1995).

DMT incorporates movement in the body to create movement in the mind; it harnesses the body-mind connection to facilitate change (ADTA, 2016). The ADTA (2016) also stated that DMT has been proven effective for individuals with "developmental, medical, social, physical, and psychological disabilities" (para. 4). When an individual does not have the ability to communicate in the typical, verbal way, the language of the body becomes key to experiencing the world and communicating that experience to others (Tortora, 2006). DMT has been shown to benefit individuals' emotional understanding and physical knowledge of themselves (Levy, 1988). Furthermore, interventions aimed at multiple aspects of the self—the mind, the body, and external experiences with others—can help individuals self-regulate and organize themselves internally (Siegel, 2015).

Barnet-Lopez, Pérez-Testor, Cabedo-Sanromà, Oviedo, and Guerra-Balic (2016) developed a DMT program to better understand emotional aspects of adults with ID, including "interpersonal relationship, self-concept, anxiety, self-confidence, emotion identification, and body self-awareness" (p. 11). The results of this study indicated that DMT improved the emotional well-being of those adults with ID who participated in the program regarding the participants' quality of life (Barnet-Lopez et al., 2016). The therapeutic process which takes place in DMT sessions may promote a deeper understanding of self through finding connections with others (Barnet-Lopez et al., 2016). An individual who is "shut down" or closed off may open up and find a new connection through the process of engaging in DMT sessions (Devereaux, 2014). Furthermore, DMT can promote empathy between the therapist and the client, which may help the client feel more connected to themselves and others (Fischman, 2009).

Moore (2014) conducted research involving friendship with adults with developmental disabilities. She discovered that, through engaging in DMT groups, participants “established social connections, increased initiation, resolved conflict, and created a sense of belonging” (Moore, 2014, p. 50). Her results confirmed the positive influence DMT has on individuals with disabilities in regard to social skills and interpersonal connections (Moore, 2014). DMT is an effective way in interacting with individuals with ASD who are also non-verbal because “the only universal language is a language that is communicated through our bodies and through movement” (Devereaux, 2014). Through “joining and attuning” with the individual with ASD, dance/movement therapists are able to connect and better understand their experience in the moment (Devereaux, 2014).

Krista Samborsky (2014) developed an 11-week DMT program for adults with developmental disabilities. She noticed that the individuals who participated in her DMT program had an increased development of empathy (Samborsky, 2014). Through engaging in a “body-based empathy enhancing movement exercise” (p. 58), individuals reinforced their mind-body connection and increased development of their social skills (Samborsky, 2014). DMT had an impact on the individual’s ability to build interpersonal relationships through the development of empathy and deeper understanding of others (Samborsky, 2014). Samborsky’s program development demonstrated the impact DMT can have on the reinforcement of positive social interactions of individuals with developmental disabilities through nonverbal communication (Samborsky, 2014).

Nonverbal individuals with ASD and ID may be “shut down from social interactions and isolated from the world” (Devereaux, 2014). Through meeting individuals “where they are” in the present moment, a dance/movement therapist can begin to better understand the unique way in which a nonverbal individual communicates (Devereaux, 2014). “There isn’t one way that works for all as a point of entry” for communication (Devereaux, 2014).

However, one way to better communicate and understand an individual with ASD and ID is through movement, which may involve repetitive body actions (Parteli, 1995). Behind repetitive actions, “a world is condensed that wants to return to life, to express itself, to be looked at and accepted in order to change” (Parteli, 1995, p. 243). Through nonverbally *attuning* (see Appendix A) to an individual’s repetitive movements, the individual begins to feel seen and are then able to foster and develop an interpersonal relationship with another individual (Parteli, 1995).

Conclusion

The literature about adults with ASD and ID states that many individuals in this population have trouble regulating their emotions or effectively using coping skills in moments of distress (McClure et al., 2009), and some have limitations in intellectual development, adaptive behaviors, and social skills (Barnet-Lopez et al., 2016). Literature also revealed that DMT is an effective way in which to work with individuals with ASD and ID. Levy (2005) further acknowledged that DMT can be useful with this population in improving body image, motor skills and coordination, emotional well-being, internal and external awareness, and communication skills. This clinical case study is filling a gap in the literature by providing evidential support of how DMT interventions can be utilized in facilitating the self-regulation process with adults with ASD and ID.

In looking at treatment with the identified client, it became apparent that he engaged in some form of self-regulation, as evidenced by his body actions. However, he could benefit from expanding and deepening the ways in which he regulated his body and mind when he was experiencing moments of distress. This led to the clinical case study with the purpose of deepening my understanding of the DMT interventions and clinical choices I made regarding the self-regulation process while working with an adult with ASD and ID. The primary question guiding my case study was: How does my understanding of self-regulation influence

my clinical choices in DMT sessions with a client who has co-occurring diagnoses of ASD and ID? In order to better understand my clinical choices, I documented my interventions with this client to deepen my understanding of how he regulated his emotions, thoughts, and behaviors in our DMT sessions.

Case Description

This case focused on my clinical decision-making around self-regulation with an adult diagnosed with ASD and ID who was also nonverbal. I focused on the interventions and clinical choices I made during individual DMT sessions with this client at my internship site, which was a day program for adults with intellectual disabilities. I had developed a strong therapeutic movement relationship with this client before beginning to collect data for this case study. I became familiar with his postures and movements through working with him over the preceding seven months. After this time, I felt I understood his unique movement repertoire. I picked up on, and noticed, patterns of his movement choices and gestures he frequently performed. “Picking up” is a term that was created and used by Marian Chace, which can also be referred to as mirroring as a way to better understand an individual’s movement experience (Sandel et al., 1993, p. 100).

Through better understanding his movement experience, I began to decipher what different gestures and movements possibly represented for him. It is worth noting that these representations are based on my assumptions because he could not verbally confirm my perceptions of his movement. However, knowing how he typically held himself provided me with a baseline in which to follow to better understand how he may be feeling during each session. When I noticed differences from his baseline posture and in how he presented in session, it provided me with information to gain a better understanding of how he may be feeling.

This client’s presenting problems included difficulty with social skills and developing interpersonal relationships, poor understanding of body awareness, anxiety regarding change or the unknown, limited opportunities to make independent decisions, and difficulty engaging in healthy and safe forms of self-expression. This client’s treatment goals involved decreasing frequency of stress and anxiety behaviors, promoting healthy interpersonal

connection and growth, and increasing body awareness. My focus while working with this client was empowerment and individual decision-making in our sessions. I have observed that adults with ASD and ID have limited opportunities to make their own decisions throughout the day. In the security of the therapy room, I provided this client with a safe space to make independent choices in our therapy sessions. I maintained a fluid structure while working with this client based on his needs.

I collected data from our once weekly sessions for eight weeks. Sessions took place in a therapy room at the day programming site. The room was small, but it was quiet with a door to help eliminate outside noise and maintain privacy for therapy sessions. The therapy room was carpeted with a table and chairs available for use. When we first began working together we sat at the table. After a few months, we transitioned to sitting on the floor during sessions so that we had more space to move and to eliminate the restriction of the chairs.

Each session lasted thirty minutes. The structure of each session shifted based on what the client presented with in session; however, we engaged in an opening ritual that remained the same each week to help the client orient to the space. This opening ritual included sitting across from or next to one another while we put together pieces of a foam puzzle and then continued to add new sensory objects and interventions. He was always interested in the foam puzzle, so it acted as a baseline to start a session or to return to if he was not receptive or open to another intervention I tried. If he appeared overwhelmed and started to leave the therapy room before our session was over, we would go back to the puzzle on the floor. For the most part, we began with the foam puzzle and moved on to a new intervention, or further developed working with the foam puzzle. Oftentimes, we incorporated rhythm into our sessions by tapping on the foam puzzle after we put some pieces together. The client always initiated some sort of tapping or brushing of the tops of the puzzle pieces.

This opening ritual provided a familiar starting point to help begin each session and comfort for the client in knowing what to expect each week. This client benefitted from developing a pattern to start each session as evidenced by his body actions. These included being relaxed in his muscles and posture based on how he was sitting on the floor, which let me know that he was at ease. Signs that he was not at ease were tensing his muscles, fidgeting, being unable to sit still, and darting his eyes around the room; these were often warning signs that he was about to leave the session. Once a routine was developed for this client, he was able to walk into the room independently each week. Prior to a developed routine, this client had difficulty coming to sessions, and often refused coming into the therapy room at all. He would sit at his table in the large day room and plug his fingers into his ears and hum loudly when I would try to offer individual DMT to him. I was one of the first therapists to meet with him individually at my internship site.

Because this client was nonverbal, I limited my use of speech to connect to the client in a way that was familiar to him. Some ways in which I did this included reflecting back his postures and how he held himself in our sessions. Mirroring may evoke “insight or transformation of behavior” in a person after they have witnessed their movement reflected back to them by another individual (Sandel et al., 1993, p. 104). I allowed him to navigate the space in the room as long as it was safe for both of us. I incorporated his subtle movements of tapping and small gestures he made with his hands.

I was aware of how I interacted with this client spatially. I allowed him to designate the amount of space between us. He never came too close to me, and he never invaded my personal space. So, we were able to work together safely in the space with him deciding how we would relate to one another spatially. I was aware of my body language and how I was presenting myself in our sessions. I noticed when I was coming in and holding a lot of tension in my own body during sessions. I also noticed if I was more animated or more

subdued during my movements. Every way in which I presented myself in space had an impact on this client in some way. The therapeutic movement relationship is impacted by both the client and the therapist. If the therapist is entering into sessions with a certain emotional mood or body posture, the client will notice that shift, and it will impact the therapeutic movement relationship.

In order to better connect with this client, I offered sensory objects with different textures and colors and engaged with him through these objects. Some of these objects included a foam puzzle, bubbles, scarves, a drum and other musical instruments, yarn balls, a soft pillow ball, stress balls, art supplies, and glitter tubes. I also utilized mirroring to attune with this client, reflecting back what I observed in his body posture and movement. I reflected back his movements of tapping and brushing the puzzle and also the fidgeting in his legs, feet, and hands. Because we had been working together and had established a therapeutic movement relationship, I was aware of our cultural differences and how they could potentially impact our work together.

Cultural Considerations

This client and I came from different backgrounds, but we were able to successfully relate to one another and work together in sessions. Some examples of our cultural differences included our genders, developmental and chronological ages, and how we communicated with others. After acknowledging our cultural differences, I was able to find an effective way of nonverbally communicating with him, and we developed a therapeutic movement relationship. Acknowledging our cultural differences and relating to one another on a body level allowed this client and me to foster a therapeutic movement relationship. Through developing this therapeutic movement relationship, we were able to work together towards reaching his treatment goals.

Ethical Considerations

My goal in this clinical case study was to protect my client's confidentiality. I did this by excluding all identifying information about this client from my study. I also excluded any identifying information about my internship site to further protect my client's privacy. In my observation-response charting, I collected data in a way that was safe and protected my client's identity. I kept my chart with my notes on my personal laptop computer, which is password protected, and I did not include any identifiable client information in my observation-response chart. I documented my data collection in my cubicle at my internship.

Maintaining my therapeutic movement relationship with this client was another important factor for this study. I wanted to continue in my role as therapist when working with my client. My priority was focusing on in-the-moment interventions with this client and being truly present with him. I focused on the specific DMT interventions that I facilitated during sessions and the moments leading up to those interventions. To make sure that I most accurately recalled information that I collected from sessions, I immediately documented data into my chart following sessions with this client. When analyzing my data, I acknowledged my biases and *body prejudice* (see Appendix A) to own what my individual assumptions of this client's movements were.

Weekly Session Notes from Observation Response Chart

Immediately following sessions each week with this client, I documented my clinical observations as they related to self-regulation for him. The following seven tables demonstrate how I documented interventions and my clinical choices during our sessions, and how I made sense of these choices as they related to self-regulation for this client. I discovered themes of mirroring and attunement as part of the therapeutic movement relationship. Furthermore, I incorporated the use of rhythm and breath support in our work to aid in his self-regulation process. These tables demonstrate our weekly sessions together.

Table 1.1

Week One Session Observation Notes

Initial observation that prompted intervention	Intervention used	Client's response to intervention	What did I notice about the overall phrase?
Client plugged his fingers in his ears and began humming loudly.	I shifted back from him to give him more space. I also began humming with him and tried to match the volume of his humming.	He stopped humming and looked at me, but kept his fingers plugged in his ears.	Did I disrupt the self-regulation process for this client? Was he self-regulating when he was tuning out the external stimuli?
Client was looking downward, and his focus appeared internal.	I shifted where I was seated in space (moved from diagonally from him to directly in front of him) and passed him a ball. I tried to make eye contact by looking at him and sitting directly in front of him.	He looked up at me and rolled the ball back. He engaged and made eye contact with me.	He shifted from an internal to an external awareness. He became aware of me in the room with him. He was brought back to present awareness.

Table 1.2

Week Two Session Observation Notes

Initial observation that prompted intervention	Intervention used	Client's response to intervention	What did I notice about the overall phrase?
He was fidgeting, humming, looking around without focusing on anything in particular, tapping his hands, jittering legs. He appeared anxious in his body movements.	I hummed with him and began tapping out the rhythm of his subtle body movements.	He appeared to be aware of the mirroring of his movements with the rhythm. He then engaged in "rhythmic conversation" by moving and then pausing and breathing. We were moving our bodies by tapping out a rhythm where words would be placed in a verbal conversation.	I'm not sure if it was my own perception, but it seemed like he was aware of the connection of the rhythm we were making to his own movements. He began to engage in more movement after I brought awareness to his body through creating/emphasizing a rhythm/beat.
He was pausing between fidgeting and slight exhales.	I exaggerated use of my own breath and mirroring his body, I began to sit up taller with each of my own breaths to demonstrate lengthening in the spine.	He began to take longer breaths.	His breath deepened/elongated, and he shifted in his posture. He sat up taller in his spine, then readjusted back to his slouched position a few times.

Table 1.3

Week Three Session Observation Notes

Initial observation that prompted intervention	Intervention used	Client's response to intervention	What did I notice about the overall phrase?
He was making louder vocalizations than he typically makes. They sounded more distressed with a higher pitch in his voice.	I reflected his vocalizations back to him and matching his voice with my own. If he lowered his pitch, then I did as well and vice versa.	He started to vocalize louder and louder until it gradually shifted into a humming sound.	It felt like our vocalizations were a way to communicate with one another, but there were also moments when he was solely focused on his own voice. I noticed he was almost fighting me to create louder vocalizations.
He was fluctuating between laying down and sitting up quickly (quicker than is normal for him in our sessions, and more frequent).	I matched his movements of sitting up and laying down. When we both sat up, I exaggerated my posture to sit up taller and straight in my spine. He typically slouches when he's sitting.	He began to stay seated for longer and sat up taller in his spine. Eventually he stood completely up.	He looked taller after moving from the floor to sitting up. The motion of up and down seemed to help him find his center.
He was seated up tall and looking all around the room but avoided eye contact with me.	I tossed a yarn ball to him, and we began to pass it to one another.	He began to look in my direction, and gradually made eye contact with me.	He was able to engage with me after starting to drift into an internal state. He was potentially dissociating, but I do not think he was fully dissociating during our session. He seemed to want to remain internally focused and engaged with me less than he typically does in our sessions. I pushed him to relate to me in some way to aid in self-regulation process.
He plugged his fingers in his ears while standing up and he began humming.	I quieted down and moved away a yarn ball that I had passed to him.	He opened the door and left the room. He walked back to where he sits in the larger workshop room.	He appeared over-stimulated. I attempted to stop engaging with him to leave space to decompress. He was able to show me his need for space and have that need met.

Table 1.4

Week Four Session Observation Notes

Initial observation that prompted intervention	Intervention used	Client's response to intervention	What did I notice about the overall phrase?
He was vocalizing sounds, humming, and he plugged his fingers into his ears. He started to walk out of the therapy room.	I attuned to him through exaggeration of his breath. I moved next to him instead of sitting in front of him.	He gradually quieted down and removed his fingers from his ears.	I questioned if he was over-stimulated and needed some time to himself. I honored what I perceived as an internal self-regulation process.
He let the yarn ball drop to the floor after passing it to me. He started to walk out of the session but turned to kick the yarn ball on the floor towards me.	I kicked the yarn ball back to him and then stepped further away from him. I gave him space to come back into the room.	He kicked the ball back to me and engaged in kicking the ball.	I wondered if there was a self-regulation process happening and if he needed more space and to take a moment from the session. I questioned if I should have given him more time by himself, or if my presence in the room helped with self-regulation for him.
He plugged his fingers in his ears and stood up.	I mirrored this gesture through putting my hands up to my ears and then added in my breath. I created a pattern of inhaling and bringing my hands up to my ears and exhaling and bringing my hands down by my side. I also began shifting from side to side in a swaying motion with him.	He began to modulate between bringing his fingers out of his ears and then swaying from side to side. Occasionally he brought his hands back up to his ears, but then eventually put them back to his sides again while swaying.	I'm not sure if I initiated the sway or if he did but we both swayed and it seemed like it was soothing for him. His body appeared more relaxed. My own body felt response was that swaying was soothing. Through <i>empathic reflection</i> (see Appendix A) I felt I was able to gain some insight into his body felt experience.

Table 1.5

Week Five Session Observation Notes

Initial observation that prompted intervention	Intervention used	Client's response to intervention	What did I notice about the overall phrase?
He was looking down and not engaging with me.	I placed a ball on the floor between us.	He pushed the ball towards me, I passed it back, and we began rolling the ball to one another. When he was done, he pushed it away.	I offered a new object into the room by offering the ball. I did this nonverbally without any spoken words or directives. He was able to make the decision on what to do with the ball. Later in the session he began kicking the ball while sitting, so I offered standing as an option. He responded by laying down on the floor.
He was tapping and brushing the foam puzzle pieces after we put them together on the floor.	I attuned to his natural rhythm by brushing and tapping with him. I then brought out the handheld drum and used that to tap out the rhythm of his body movements on the drum.	He began tapping and brushing more frequently and quicker while also watching the drum.	I offered the drum to him to continue his own beat. He expressed a preference for the puzzle pieces and continued tapping on the puzzle instead.
He became timeless in his movement.	I brought in paper and markers and gave one to him, while also holding one. I matched his movements with the marker on the paper and challenged him to modulate how he drew in different timings/speeds.	He drew quick, short strokes on page. (intervention continued in following row). He shifted his marker strokes very slightly and moved his marker with mine.	It appeared like we were dancing with our markers, through the pathways we were using and also connecting to one another through this. He was able to move his marker extremely quickly, and then was able to modulate to a slower pace with me.

Table 1.6

Week Six Session Observation Notes

Initial observation that prompted intervention	Intervention used	Client's response to intervention	What did I notice about the overall phrase?
He was bouncing his leg and stroking/brushing the puzzle with his hand in circular motions.	I mirrored him with leg bounces and moved my hand on the puzzle with him.	He continued movement and also began to breath more audibly (intervention continued in following row).	
	I exaggerated my own breath to match his.	He stopped moving his leg and moved into stillness with his whole body.	He responds to seeing his own breath in my body. We are activating his mirror neurons. Breath seems to promote stillness with this client.
He stood up from the floor quickly and began swaying. We had just been adding more pieces to the foam puzzle.	I stood up a few moments after and swayed with him. I also added in more weight to my feet and stood more firmly on floor each time I picked up my foot.	He began to intentionally step one foot and then the other on the puzzle pieces. He moved closer to me while standing, but then stopped swaying and plugged his ears while making louder vocalizations (intervention continued on following row).	
	I created more space between myself and him (in case the proximity was the reason for his disengagement). But I also matched his vocalizations by using my breath and exaggerating my use of breath while swaying slowly. In my swaying, my breath was the source of my sway motion (sway right breath in, sway left breath out).	He continued with his louder vocalizations for a short period of time and then began to quiet down. He shifted right and left subtly in his body, matching my sway. He stopped his vocalizations and sat down on the floor by the puzzle pieces again.	I was building breath support back in for him. We were having a non-verbal conversation and relating to one another through movement. He responded to breath by relaxing in his own body.

He was laying on his side, continuing louder vocalizations and humming. I saw him holding tension in his body while also moving his hand on the foam puzzle. He did so with more weight than he typically uses.

I moved my hand on the foam puzzle with him. I was moving relationally in the space with him. Our hands appeared to be dancing with one another, without touching. We were moving in the empty space. Continuing with weightedness, I shifted my speed slightly to become slower.

He continued moving his hand with mine and began to slow down with me. He also lowered his vocalizations to a quieter volume as they slowed down their movement. I began to hear his breath more, without the vocalizations (intervention continues on following row).

I mirrored his use of breath.

He moved closer to me and laid down on the foam puzzle that was between us. I noticed he was much more relaxed in his body (he stopped bouncing his legs, his hands were relaxed by his side, he quieted down his vocalizations, elongated his legs on the floor, and his spine/torso shifted from contracted position into a longer/straighter position).

I'm curious if engagement helps with the self-regulation process. Through engaging with him I was able to help him move from a place of physical tension in his body to a more relaxed posture, indicating physical ease.

He left the session quietly, without any vocalizations.

As he left the session, I walked with him back to the larger room where he sits with peers. I was silent with him, matching how he was standing in the space.

He plugged his ears as he walked into the larger, louder room.

He appeared to be more connected to his core/self (stood taller, focus of eyes was more aware/direct when walking to larger room, audible breath, slower walk-maybe more intentional?). In the session we utilized rhythm, texture, and breath. He seemed more relaxed afterwards.

Table 1.7

Week Seven Session Observation Notes

Initial observation that prompted intervention	Intervention used	Client's response to intervention	What did I notice about the overall phrase?
What I observed as dysregulation in his body and voice (he was very fidgety and louder with his vocalizations).	I introduced the puzzle and placed it in the space between him and me after sitting down with him.	After building the puzzle he seemed to be organizing himself. The action of putting the puzzle together seemed to help him focus and reorganize. He produced quieter vocalizations, and I began to notice more audible breathing from him (intervention continued on following row).	
	I connected and attuned with him through his breath. I also picked up on his tapping rhythm and joined in to match that to tapping action on the puzzle.	He continued in rhythmic action and noticed I was tapping with him. He increased his breath support and his vocalizations changed from louder and abrupt to quieter and sounding more relaxed in his voice.	The puzzle seemed to be a baseline and helped in getting him back to a state of homeostasis or regulation. Building the puzzle, tapping it, and brushing it seemed to be regulating for this client.
He continued to bounce and fidget his legs and feet on the floor.	I played the rhythm of his jittering motion of his legs on the drum.	He stopped moving when I played the drum (intervention continued on following row).	
	I stopped playing when he stopped moving.	He began engaging in some sort of non-verbal conversation with me. He would move, and I would play the drum, then he'd stop moving and I'd stop playing. That pattern continued until he plugged his ears and looked away.	I was curious if he felt overwhelmed or overstimulated and needed to get away from the rhythmic structure. I find rhythm organizing, so I wonder what it was like for him to hear and witness his internal rhythm being played in front of him.
He stacked up and organized the puzzle at the end of the session independently.	I joined in and helped him in his process.	I noticed more audible breath from him while he was organizing the puzzle pieces.	He loves to organize and neat up. I wondered if it was soothing and if it is part of his self-regulation process.

He was concave in his posture and not engaged with me. He had an unfocused gaze in the room with an indirect focus.

I sat up taller after mirroring his concave posture. I moved to sit directly in front of him.

He eventually noticed me, sat up and began brushing and patting the top of the puzzle pieces (intervention continued on following row).

I joined in brushing and tapping the puzzle with him.

He became more aware of the space around him. He sat up taller, elongated his spine, and became more vertical and linear. He appeared more connected in his body and I heard a more audible breath from him.

Is the puzzle a tool in helping this client to self-regulate and organize himself? Does accessing his spine and connecting with others have anything to do with self-regulation?

Case Discussion and Conclusions

This section describes specific indicators demonstrating self-regulation for this client and the interventions I used to aid in the self-regulation process. I included the client's responses to my interventions and what I learned about self-regulation from his responses. Because self-regulation is so unique to each individual, I focused on recording only what I noticed while working with this client at my internship site. This client has co-occurring diagnoses of ASD and ID. This information was gathered through charting of my observations relating to self-regulation during our sessions (see Appendix B). Information documented in my chart included the date of the session, my initial observation of the client that prompted my intervention, the intervention itself, the client's response to the intervention, and any notes or observations I had regarding the overall phrase. The overall phrase included any observations from my initial observation of the client to his responses to the interventions.

From this chart, I identified patterns and themes to highlight the self-regulation process with this client as a means of answering my clinical question: how does my understanding of self-regulation influence my clinical choices in DMT sessions with a client who has co-occurring diagnoses of ASD and ID? Themes that improved the self-regulation process for this individual included rhythmic awareness and an exaggerated use of breath, which were supported through interventions of mirroring and attunement. The therapeutic movement relationship served as an overarching theme that supported his self-regulation in and of itself while also underpinning the interventions of mirroring and attunement to his rhythm and breath (see Figure 1). This highlighted my understanding of my clinical decision-making process while working with this individual. The therapeutic movement relationship also impacted my understanding of how he regulated through movement in our sessions and what I picked up on through his body action. Kinesthetic empathy helped me to

become aware of what movements might be like for him, while also informing me of my own biases and assumptions based off of my own body prejudice. The emotional meaning of an individual's body response shifts and organizes to align with their perception of an external experience (Barrett, 2017). Body movement is subjective and holds differing meanings for various individuals. These interventions involve the mind, the body, and interpersonal connections with others, which can aid in the internal organization and self-regulation process for an individual (Siegel, 2015).

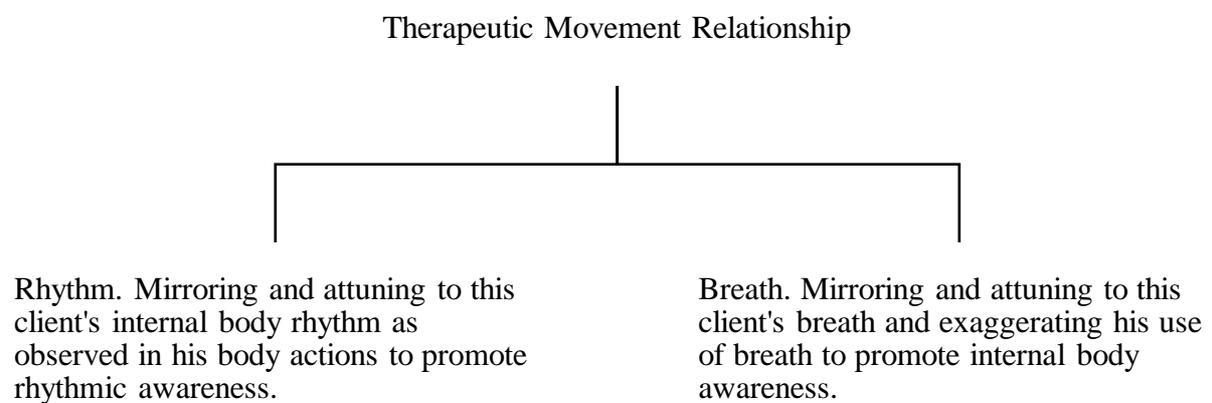


Figure 1. Themes of interventions that promote self-regulation.

Indicators of Self-Regulation

I utilized Siegel's theory of self-regulation to frame how I viewed self-regulation in DMT sessions. Self-regulation is a process that organizes the mind and the body in space (Siegel, 2015). Self-regulation involves an interconnected system that includes the brain of an individual, the individual's entire body, and the individual's relationships with others (Siegel, 2015). Indicators of self-regulation can be visible through the body, vocal expressions, and interactions with others. While working with this client I focused on his body actions and vocalizations and how they informed my understanding of his self-regulation process.

Body signs. The body signs in this client that I observed as self-regulation were in his posture, repetitive movements, and how his body was connected overall. I observed tension in this client's body, which released and relaxed when he engaged in self-regulation. I was aware of muscle tension, indirectness, enclosed posture, and lack of grounding as indicators of dysregulation and the converse as self-regulation.

In moments of distress or uncertainty, the client often held tension in his shoulders, neck, and arms. He constantly engaged in small hand movements and tapping motions with his feet. He was unable to connect with me interpersonally or focus his attention in our sessions when he was dysregulated. According to Siegel and Bryson (2012), the ability to engage in an interpersonal relationship and focus attention is informative of the integration of an individual. More specifically, the integration is referring to the connection between the "understanding of the complex dynamics surrounding relationships and the brain" (Siegel & Bryson, 2012, p. 11). If an individual is unable to focus or relate interpersonally, it may signify a separation, or dysregulation, between an individual's internal experience from their external connections. An inability to find a place of stillness indicated that there was activity, and even hyperactivity, in the body. Increased movement activity paired with an inability to maintain or find stillness is something I consider to be dysregulation. This is an example of my body prejudice and how I understand a state of sustained hyperactivity to eventually become disorganizing in the body.

In the case of this client, I observed in moments of distress that he had difficulty accessing his directness. I acknowledge my body prejudice of correlating indirectness with dysregulation. When he was upset he was unable to focus visually in the room, and he often darted his eyes and head indirectly, unable to focus directly on what was in front of him. This perception of how he struggles to direct his attention and energy in the space indicated to me that he was not stable in space. It appeared that he was unable to take in the external

stimuli due to an intensity of internal stimuli. This is related to Siegel's concept of the balance of internal and external stimuli (Siegel & Bryson, 2012). The brain "takes in signals from the social environment, which in turn influences a person's inner world" (Siegel & Bryson, 2012, p. 122). If an individual is unable to connect to external stimuli then the "interpersonal integration" (p. 122) is impacted, consequently impacting the self-regulation process (Siegel & Bryson, 2012).

While mirroring his movements of indirecting his focus, the indirectness felt disorienting to me in my own body. I understand self-regulation on a body level to involve connectedness to the navel center or core and connectedness to breath. Signals from our body provide insight into how we are feeling and connect the physical to the emotional state we are in (Siegel, 2015). An awareness of our body increases our ability to recognize when shifts happen, which impacts our ability to self-regulate (Siegel & Bryson, 2012). Strong internal connections can help a client build relationships with others (Siegel & Bryson, 2012). Utilizing Bartenieff's fundamental patterns of total body connectivity—breath, core-distal, head-tail, upper-lower, body-half, and cross-lateral—can aid in strengthening these connections (Hackney, 1998). Each pattern connects to an early developmental phase that was either experienced or not (Hackney, 1998). Hackney (1998) described the patterns of total body connectivity as "a way of relating to self and to the world" (p. 13).

In examining the client's patterns of total body connectivity, his posture was enclosed and sinking. He did not engage his core or sit up tall in his spine, indicating a weakened head-tail connectivity (Hackney, 1998). He shifted towards body regulation as evidenced by an increased engagement of his core and lengthening in his spine, which resulted in a taller posture. His breath was another indicator to his overall body connection. He increased his use of breath as he became more connected in his body. An increased connection to the body supports self-regulation through integration of the body and the mind. Moving through a

bottom-up processing from the lower to the upper brain, this client shifted immediate and instant body responses to more connected and controlled movements (Siegel & Bryson, 2012), as evidenced by his body actions, verbal vocalizations, and increased connection to our interpersonal relationship demonstrating engagement in his self-regulation process. Connections between the body and the mind are found through movement (Moore, 2009).

In addition, this client had difficulty grounding and increasing his use of weight to stabilize his body. He engaged in lighter, smaller movements and had trouble accessing a strong use of weight. His patterns of engaging in lighter-weighted movements can be related to his regulation process. Movements smaller and closer to his body limited connections with others externally, thus impacting his self-regulation process through limiting his interpersonal connections (Siegel & Bryson, 2012). His lack of a strong use of weight also signified a possible internal disconnection within his body. Actively connecting to the Laban effort factor of weight can help an individual gain a stronger relationship to the earth and gravity while also helping the individual understand a sense of self and presence in the world (Movement Has Meaning, 2011). An understanding of one's self can contribute to hindsight and a better understanding of another individual's experience (Siegel & Bryson, 2012). Through differentiating between self and other, one can incorporate the interpersonal relationship as a means of self-regulating (Siegel & Bryson, 2012).

While working with this client, I initially felt he was lacking in his ability to utilize his weight. I felt that generally in our sessions he had difficulty pressing into the floor for support. As we continued working together, I began to realize his choice of not wanting to press into the ground was his preference. My body prejudice was that grounding would allow him to stabilize in his body. However, I began to notice this client had the ability to ground down by pressing into the floor, he just chose not to. Merriam-Webster (2018) defines the experience of being grounded as “mentally and emotionally stable”. The body is

always connected to the earth in some way and yielding into the ground can create stability to move from (Hackney, 1998). How an individual utilizes their weight “reflects how they sense themselves interacting with their surroundings” (Tortora, 2006, p. 162). When working with this client I observed his affinity was moving lightly and gently through the space. His light use of weight was a potential indicator that he “treads lightly through his surroundings” (Tortora, 2006, p. 162). I perceived this client to be a fairly cautious individual who had a clear sense of body boundaries in our sessions. His use of weight impacted and informed our interpersonal relationship and how we engaged with one another in the space, thus impacting his self-regulation process during our sessions together. Through our therapeutic movement relationship, he connected to his sense of self through observing my exaggerated movements that incorporated a stronger use of weight. My exaggerated movements were solely based on his body actions that I mirrored back to him; I simply used a stronger use of weight when reflecting his movement.

Repetitive movements. Repetitive movements for this client included fidgeting, humming, looking around, and tapping in his body. He would constantly fidget his legs and feet on the floor in quick, small movements. He tapped and brushed his hands and fingers lightly on a foam puzzle that was utilized during sessions. He would look around the space without focusing on anything in particular while engaging in these repetitive movements. Through engaging in these movements with this client, I gained a sense of what it may feel like to move in these small quick ways by working with him right brain to right brain (Siegel & Bryson, 2012). According to Siegel and Bryson (2012) the right brain “is holistic and nonverbal, sending and receiving signals that allow us to communicate through facial expressions, eye contact, tone of voice, posture, and gestures” (p. 16). Kinesthetic empathy, which is a way in which to understand an individual through movement (Fischman, 2009),

helped me to understand that this client may be experiencing some anxiety, which could be manifesting through his movements.

I felt that his engagement in the repetitive motions was potentially his way of regulating and working through his anxiety, which I perceived as a positive way for him to self-regulate. As long as the repetitive motions were not inhibiting his life negatively outside of our DMT sessions, I would not consider his repeated movements negative. Restricted repetitive behaviors have actually been found to reduce anxiety with individuals with ASD (Factor et al., 2016; Joosten et al., 2009). Furthermore, he was not physically harming himself while engaging in these movements and motions. The longer I worked with this client and got to know him, the stronger this felt like a method to reach regulation of his body. Because his upper brain functioning may have been more limited, he depended more on his lower brain functioning through moving in his body for regulation (Siegel & Bryson, 2012). His body movements appeared connected to his unique vocalizations, oftentimes co-occurring.

Vocalizing and humming. With this client, I observed a lot of vocalizations and humming during our sessions. I heard the use of weight in the client's voice as he vocalized louder, but his vocalizations were disconnected from his body. There was a lack of breath support and he appeared dysregulated based on his body presentation. I could see him running out of breath and gasping for air while he was vocalizing. This disconnection from his breath was a sign of disorganization within his body. In addition, he presented with a lack of spatial awareness and focus during louder vocalizations.

For this client, humming appeared more regulating and steadying in relation to his vocalizations. The action of humming shifted the client's body from concave to a more vertical posture. He still held tension in his body while humming, but it seemed like a way for him to regulate from vocalizations based on his bodily response. While humming, if he

kept his eyes open, he was able to direct his focus and even make eye contact with me. Through keeping his eyes open, he was able to integrate his internal sensory response while simultaneously attending to his external interaction with me in the room. The sound, as well as the action, appeared to keep him calm. While humming, he seemed to be self-soothing with his own internal rhythm present in his humming sound.

Therapeutic Movement Relationship

The interpersonal connection with others is an important part of the self-regulation process, which is why my interactions with this client had an impact on how he engaged in self-regulation. I understand self-regulation to be a process that involves the body, the mind, and an individual's relationship to others (Siegel & Bryson, 2012). An individual's ability to self-regulate is heavily impacted and influenced by their environment (Siegel, 2015). Our established therapeutic movement relationship and our developed routines during DMT sessions set up expectations and allowed him to feel comfortable knowing what to expect each week. Of course, our routines would shift to meet his needs and how he presented in sessions each week, but we had a few distinct activities that we did together each time. For example, we almost always incorporated the foam puzzle in some way during each session. We used the foam puzzle in many different ways. We would put together the puzzle pieces, tap out rhythms on the puzzle, brush to feel the texture of the puzzle, or organize the pieces in some way—to name a few. It is essential to focus interventions on an individual's functioning of the brain, body as a whole, and relationships in order to help with self-organization (Siegel, 2015). One way in which we foster relationships is through emotions (Siegel, 2015). After being in close proximity with another individual for an extended amount of time, you begin to connect emotionally and gain a sense of how the other individual is feeling, which informs the interpersonal relationship and how you interact (Sifferlin, 2017).

There was an established interpersonal relationship between my client and me, which allowed me to better understand what could be self-regulating for him and which interventions might be beneficial. Interpersonal relationships are part of self-regulation in addition to the intrapersonal process that takes place inside the body and the mind (Siegel, 2015), which is why it was so important to develop a therapeutic movement relationship with my client. Our therapeutic movement relationship was also an indicator of self-regulation. I observed how this client engaged with me during our sessions, and it became a theme of how I perceived his self-regulation process. When this client was dysregulated, he was unable to engage interpersonally with me during our sessions, as evidenced by him plugging his fingers into his ears, humming loudly, and walking or pacing. He would avoid engaging with me and become internally focused as evidenced by shutting his eyes and humming to remove any external sounds. Sometimes he would even walk out of the therapy room. Ways in which he would attempt to regulate his body after shutting out the outside stimuli included humming loudly and plugging his ears while also closing his eyes at times. He was both shutting out external stimuli and connecting to himself internally as a method of self-regulation.

When he plugged his ears and hummed, I always increased the space between us, stopped what I was doing, and removed any new sensory objects that I had recently introduced to him. Thus, I was responding to his emotional needs before further stimulating his interactions with a new sensory object. I was integrating his right brain emotional needs by nonverbally exercising the upper part of his brain through offering opportunities to find ways to engage with a new object. This entails a deep and nuanced understanding of his movement behavior through our therapeutic movement relationship. He responded positively to an increased distance of space between us. He was also typically able to re-engage with me once I removed the new stimulus. After a few moments this client would relax in his

body and begin to become aware of the therapy room once again. This was only if the new stimulus that I introduced was removed and placed out of the way.

Typically, I would introduce new sensory objects to our sessions multiple times to help with the transition into working with something new to this client. We made gradual shifts in our routine each week to continue developing the unfamiliar with the familiar. I helped to integrate his memory, which aided in his self-regulation. In the case of this client, our sessions were set up similarly each week to encourage his implicit memories to form expectations of our sessions, which were then organized by his hippocampus to become explicit memories (Siegel & Bryson, 2012). Our routine allowed him to connect his internal awareness and memories of our sessions to relate to the external, outside world.

Interventions to Aid in the Self-Regulation Process

I facilitated interventions to support self-regulation as revealed through elongated postures, breath support, relaxed muscles, increased use of directness and grounding, repetitive movements, and humming. This was revealed through themes that emerged from our sessions and how I interpreted my interventions as self-regulatory for this client. Through mirroring and attuning with this client, I was able to get a sense of how he might experience his movements. Given our therapeutic movement relationship, I felt I had a strong understanding of his preferences for movement and how to proceed with him in our sessions to encourage his self-regulation process. Although I incorporated many interventions during our DMT sessions, I highlighted the few that were continued throughout our time together and that also related to his self-regulation process (see Figure 1).

Mirroring and attunement. According to Erfer (1995), DMT interventions and techniques are beneficial when working with a client nonverbally and developing rapport. One such technique is the use of mirroring, “which involves reflecting back someone else’s movement and meaning, and communicates acceptance” (Moore, 2014, p. 20). Mirror

neurons, which are activated during the process of mirroring, allow for a shared experience when working with a client through connected inner states (Stern, 2000). A therapist increases the power of the central nervous system mirror neurons when moving in connection with a client or when simply acting as an observer for the client (Berrol, 2006). This engages the interpersonal relationship to aid in self-regulation (Siegel, 2015) and cultivates integration of self and other through capitalizing on opportunities for social interaction. All of this is accomplished through the primary means of movement.

The process of mirroring can be initiated without spoken language, and it opens up a way to build relationships and develop a unique form of communication with another individual (Berrol, 2006). Furthermore, mirroring, through reflecting back to another person, can encourage the development of empathy (Stern, 2000). Responding to an individual's movements is a way in which that individual is validated through knowing that someone can communicate and respond in a way that is familiar to them (Tortora, 2006). Feeling understood and validated in relationship with another individual supports the establishment of a secure attachment, which aids in the self-regulation process (Siegel, 2015).

I became aware of a preference I have to mirror and attune when working with this client. According to Siegel, effective attunement is one way in which an individual's cognition develops through being in relationship and connecting with another individual (Siegel, 2015). Attunement involves connecting to another individual in the present moment. Attunement with another person is matching, or mirroring, some aspect of the individual's movement without totally mimicking the exact motions of that person (Fischman, 2009). Mirroring strongly corresponds to the concept of attunement with another individual (Fischman, 2009). Mirroring and attuning are two nonverbal ways to reflect back to the client what I am observing. It was a way in which to highlight explicitly what was happening implicitly in terms of integrating body memory of self-regulation (Siegel & Bryson, 2012).

These two ways of interacting with this client were both useful in reflecting back the self-regulation I noticed in his body. Mirroring and attunement helped this client to increase awareness of what was happening internally and served as a way to begin intentionally changing his inner experience, thus promoting self-regulation. Nonverbal methods of attunement included echoing, matching, and mirroring breath, posture, and the internal body rhythms of this client based on his body actions.

Most of my interventions working with this client involved mirroring his movements and attuning with him nonverbally. Examples of this included trying on his postures and how he was sitting during our DMT sessions, tapping out a similar rhythm to the rhythm he was tapping out, moving simultaneously with him, and repeating back vocalizations and movements he shared in sessions. I often shifted his movements and postures in some way or shifted which body parts I moved. For instance, if he moved his feet repetitively, I sometimes moved my hand in the same motions. Other examples included me sitting in the same way as he was sitting on the carpet or humming along with him to match his vocalizations. Attuning with this client allowed me to sense where he was in the present moment and gave me a glimpse into how he could be feeling. It helped me realize when I was feeling regulated or dysregulated and how he may be feeling similarly. Through observing and mirroring this client's body actions, I increased my understanding of his internal rhythm.

Rhythm. Rhythm is orchestrated by the fluctuations of silence and sound in space that create a distinct and observable pattern (Tortora, 2006). Rhythm can be both seen and heard in the space (Moore, 2009). When engaging in rhythm, the body becomes the instrument of enacting the sound and the beat into the space (Tortora, 2006). As stated by Raskin, "the most immediate reaction to rhythm is to fall in with it... You become part of it in a process which is not so much imitative as absorptive. The mood of the rhythm then

becomes your mood” (as cited in Moore, 2009, p. 203). Timing and rhythm are two of the underlying principles in charge of organizing communication with another individual (Tortora, 2006). Rhythm is an interactive part of communication with others (Capello, 2015). Thus, rhythm served to assist in communicating with my client on a body level and prompted a deeper understanding of his internal experience.

On a body level, rhythm exists in our heartbeat and the flow of blood in our bodies, as well as our digestive system and how we walk in the space with our footsteps (Capello, 2015). Within rhythm, patterning and repetition can exist in the body as a part of the internal flow of an individual. Thus, awareness of our internal body rhythms can support our self-regulation process (Siegel & Bryson, 2012). I noticed that rhythm helped this client to organize and regulate his body, as evidenced by his reduced frequency of repetitive movements, reduced frequency of vocalizations, and his ability to focus his attention on a single activity. Typically, he had some difficulty maintaining focus on what was happening in the present moment and engaging with one stimulus at a time.

When working with rhythm, I focused on rhythmic awareness with this client. I mirrored his rhythm back to him through tapping and playing a drum or using the floor to tap out the rhythm I noticed in his body. His body rhythm was created by his repetitive movements. In addition to using a drum or the floor to create the beat of my client’s internal rhythm, I also incorporated mirroring. I mirrored this client’s rhythm by mirroring his movements back to him as he was moving. I mirrored his tapping and fidgeting back to him so that he could see what his body was doing. Thus, making explicit what he was communicating more implicitly (Siegel, 2015). Mirroring his rhythmic body actions strengthened our interpersonal relationship, which in turn supported self-regulation through bridging the gap between his internal sensation and his external understanding (Siegel & Bryson, 2012). After mirroring this client’s tapping and fidgeting, sometimes he would stop

moving his body. He would bring his awareness to what was happening in my body, therefore noticing what he was doing with his body. Individuals with ASD or ID may engage in repetitive movements like rocking, tapping, avoiding eye contact, or tactile stimulation to block off sensory input in an attempt to regulate themselves (Tortora, 2006). Engaging in rhythm can be organizing for an individual by bringing a sense of awareness to their body (Tortora, 2006). “Signals from the body directly shape our emotions” (Siegel, 2015, p. 169), impacting our ability to self-regulate. Consequently, an increased awareness of the body can aid in the self-regulation process through illuminating emotional sensations within the body, and promoting present moment awareness (Siegel, 2015; Siegel & Bryson, 2012). The rhythm of one’s breath can also serve in supporting self-regulation.

Breath. Breath is the first developed pattern within the body. It requires no conscious thought to engage in breathing, but our use of breath reflects changes in our feelings, thoughts, and consciousness (Hackney, 1998). Breath support enlivens the body and brings life to all movement within the body (Hackney, 1998). The depth of breath present within the flow of the inhaled and exhaled can be informative of tension in the body (Tortora, 2006). Tension can indicate feelings of distress or different dysregulating emotions present in the body and has an effect on how an individual is breathing and engaging in breath (Tortora, 2006). Shrinking in the body, which is common in individuals with ASD, is related to a more pronounced exhalation of breath, indicating that these individuals could benefit from engaging in a more extended inhale to help expand their bodies in space (Capello, 2015). Furthermore, connecting to breath can be utilized as a calming method (Becker, 2012).

As this client engaged in louder vocalizations and humming, I began by first mirroring his vocalizations and humming and then modulating the use of my breath. I exaggerated my breath to demonstrate breath support to my client. Upon exaggerating my

breath, the client would shift his vocalizations to become quieter and quieter until he began to engage in active breath. Consciously breathing, which is also referred to as actively breathing, is an important part of the attunement process (Hackney, 1998). “Conscious cultivation of breath,” also referred to as actively breathing, is an important part of the attunement process (Hackney, 1998, p. 52). Synchronous breath is one way to facilitate a connection with another individual (Tortora, 2006). It is through such a connection where self-regulation can be modeled and supported. According to Tortora (2006), “breath flow is the phrasing pattern that resembles and is often directed by the rise and release of the breath” (p. 500). Bringing awareness to the breath and breath patterns can help to understand an individual’s natural internal rhythm (Capello, 2015). The use and activation of breath not only supports a physical activity, but also promotes relaxation within the body (Tortora, 2006). This addresses self-regulation at the level of the physical body through a shared relationship and increased awareness of one’s own internal sensations (Siegel & Bryson, 2012).

Active breath involves consciously thinking of breathing and bringing the process into your awareness. Sometimes it would take a few minutes, and other times it would take longer for the client to shift from abrupt, loud vocalizations to engaging in active breathing. While actively breathing, the client slowed down his movements and connected more to his core through deeper belly breathing. Deep breathing slows down the heart rate, lowers the blood pressure, and sharpens the mind’s ability to focus by slowing down the amygdala and supporting higher brain functioning in the frontal lobes (Becker, 2012). This increases self-regulation by mitigating the body’s instinct to move into action before any conscious awareness or processing of the experience in the mind takes place (Siegel & Bryson, 2012). The amygdala prompted an increase in his awareness of internal sensations through breath to balance alongside the external stimuli he was experiencing (Singer, 2016).

Responses to Interventions

Siegel discussed the role of the nervous system and our relationships in aiding self-regulation (Siegel, 2015). Thus, it was imperative that I developed a therapeutic movement relationship with this client before and as a means of addressing self-regulation. Our therapeutic movement relationship took some time to evolve. It began with this client recognizing me and feeling comfortable coming to the therapy room. Factor et al. (2016) stated that individuals with ASD and ID benefit from structure and knowing what to expect through rituals and routines. Furthermore, a disruption or change in an individual's routine may trigger anxiety (Ozsivadjian, Knott, & Magiati, 2012). Thus, as we developed our work together, we created a sequence in which we conducted our DMT sessions. Each week, I would find my client at the day programming site and say hello. We would walk to the therapy room with him guiding the way, and we would sit on the floor. From there, we would begin our sessions usually in the same way—engaging with the foam puzzle—and then the session would unfold. This client and I developed a level of comfort that allowed us to work on aiding and growing his self-regulation process.

His responses to interventions were directly related to our interactions with one another in session. Because of our therapeutic movement relationship and my knowledge of this client, I understand my intervention choices and my perceptions of his self-regulation process to be accurate based on his responses. I noticed changes and shifts in his body to indicate regulation after interventions involving breath and rhythm. These responses included release of tension from his body, a more relaxed posture, elongation of breaths, more audible breathing, sitting up taller in his spine, quieting vocalizations, swaying slowly, softening movement, removing his fingers from plugging his ears, or moving into a place of stillness in his body.

When I exaggerated my breath to help him in the self-regulation process, he slowed down, paused, and then began to engage in active breathing. His breath became more apparent and I was able to visually see his use of breath while also hearing his inhales and exhales. Through continuing in active breath engagement, he was able to slow down his movements and eventually move into a place of stillness. I noticed that he was seated taller and longer in his spine and he had released tension from his shoulders. He removed his fingers from his ears and appeared calm in his body.

When I engaged in rhythm and brought awareness to his body rhythm, he became aware of his own internal rhythm and was able to shift and modulate through it. After engaging in a rhythm with me, he appeared more aware of his own body. He shifted his posture and accessed his verticality. He created and shifted the rhythm and I acted as a reflection for him in his process. Through engaging with rhythm, he became more organized in his body. His vocalizations shifted from random sounds to more controlled and steady humming. I observed his sporadic vocalizations as being dysregulated, because of what I observed in his body. He appeared disconnected in his body, which was evidenced by him moving indirectly in the space, his inability to focus on anything specific visually, and his inability to be direct with his movements in the therapy room. With the use and incorporation of rhythm, he became more connected in his body, as evidenced by his ability to access his directness in space.

Conclusion

There are many different ways to utilize DMT in nonverbal connection with others, and I incorporated interventions that seemed beneficial for this client based on our established therapeutic movement relationship. The interventions and my clinical choices were focused on this client as an individual to continue engaging in person-centered counseling. Mirroring and attunement were helpful to connect with him nonverbally during

DMT sessions. Through working with this client, I developed a greater understanding of how we related to one another in our sessions and how that informed our work together. Our therapeutic movement relationship provided me with insight to determine which interventions to implement with this client.

Engaging in active breath and rhythm helped this client self-regulate. I exaggerated my breath and increased rhythmic awareness with this client to aid in his self-regulation process. Kinesthetic empathy was informative of my work with this client. I not only noticed his body responses to interventions, but also my own felt responses from mirroring and attuning with his movements. I was informed both by what I was seeing through his movements and how I was sensing the various movements in my own body while mirroring what I observed. Our therapeutic movement relationship then helped inform my body prejudice to deepen my understanding of my biases and assumptions.

Summary and Future Implications

After completing this case study, I have a greater understanding of what occurs during the self-regulation process. However, because self-regulation is so unique to each individual, I do not want to over-generalize my findings on self-regulation beyond this client. A limitation in this study is that it only focused on one client. My focus was very narrow, and I focused on the specific self-regulation process for this one individual. I chose to do this because it helped me to focus and clarify for myself what self-regulation looks like in the body. During this study, I developed a greater understanding of my preferences and biases of working as a therapist. I discovered mirroring and attunement are two of the major skills that I use to engage with an individual. I learn from trying on other's movements and connecting with others through kinesthetic empathy. Self-regulation is an interpersonal process that involves connecting with others, so developing a therapeutic movement relationship with this client allowed me to better understand how he regulates himself and what I could introduce to help aid in his self-regulation process.

This study provides evidential support for the research that has already been done working with DMT with ASD and ID. While there has been research done with adults with ASD and ID, self-regulation and the use of DMT, it is limited. There is currently research in the field of DMT working with children with ASD and ID, but less research involving adults with these diagnoses. This study contributes evidence of the self-regulation process utilizing DMT with adults with ASD and ID. This study demonstrates the importance of DMT and its connection to self-regulation when working with an adult with ASD and ID. Other dance/movement therapists could further expand upon this study and implement it with individuals in different settings. They could utilize interventions that I highlighted in this case study—mirroring, attunement, breath, and rhythm—while also applying them to group settings and working with the broader population of adults with ASD and ID. This could

help to further the research of DMT with ASD and ID regarding self-regulation and its importance for this population as a whole.

In the future, I would be interested to see what other interventions would be useful in this client's self-regulation process. I would also be curious to see how my facilitation could be different in shifting how I can relate nonverbally in other ways. During my time with this client, I utilized mirroring and attunement as my primary means of interaction. I would like to try other ways of engaging with this client, utilizing other methodologies of DMT to see how it would impact his process of regulation such as focusing on and modulating between different Laban effort qualities, and utilizing aspects of another DMT framework. I would like to implement a different theoretical framework to better understand the impact it could have on this individual. For example, I utilized a Chacian framework but I would be interested in seeing how another framework such as Liljan Espenak's psychomotor therapy could shift and alter our therapeutic relationship. Liljan Espenak is a dance/movement therapist that is well known for her work with individuals with developmental disabilities incorporating improvisation and creative movement with the "medical model of observation, diagnosis, and treatment" (Levy, 2005, p. 43). I would also like to learn more about how the therapeutic movement relationship can be influential in the self-regulation process. To further this study, I would be interested in how other dance/movement therapists perceive their therapeutic movement relationship with clients to impact how their clients are able to regulate during a session. Furthermore, this study provides an opportunity for future research in this area to evaluate the effectiveness of these interventions to improve self-regulation for this population.

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Appendix A

Definition of Terms

Applied Behavioral Analysis

Applied behavioral analysis is an established process of working with individuals to better understand the relationship between their behaviors and the impact their environment will have on their future behaviors (Ivey et al., 2012). Interpersonal contact, empathy, and self-congruence are all important aspects that the therapist must be aware of, when utilizing applied behavioral analysis (Ivey et al., 2012).

Attunement

“Attuning is taking in the movement with a soft focus, getting a feel for the sequence, shape, and rhythm of the action without becoming too analytical” (Moore, 2009, p. 142). It is a form of empathic reflection (Fischman, 2009). It is a way to develop empathy with another individual and better understand their experience (Downey, 2016).

Body Prejudice

Body prejudice is the positive or negative meaning making of a movement observation based on the personal experience of the observer (Moore, 2009). When the positive or negative association is then projected onto similar movements, “an inappropriate and prejudicial reaction may result” (Moore, 2009, p. 145).

Dance/Movement Therapy

DMT incorporates present moment movement in the body to provide connection and to promote growth and healing in the mind (American Dance Therapy Association [ADTA], 2016). DMT integrates sensations, perceptions, and cognition to promote both intrapersonal and interpersonal development within an individual (Fischman, 2009). “Dance and movement are utilized as a way to the unconscious and as a facilitator of different aspects of health and well-being” (Chaiklin & Wengrower, 2015, p. xxxi).

Empathic Reflection

Empathic reflection is both a verbal and nonverbal process that happens in the present moment, involving the kinesthetic response to develop through empathy and the movement experience between a dance/movement therapist and a client (Downey, 2016).

Kinesthetic Empathy

Kinesthetic empathy is the deeper understanding of another person through experiencing their movement and reflecting upon how the movement feels within your own body (Fischman, 2009). It involves the therapeutic movement relationship including “non-verbal communication, bodily movement, dancing, and verbal expression” (Fischman, 2009, p. 33).

Mirroring

Mirroring is a technique of engaging in empathic reflection (Downey, 2016). It involves embodying the exact movement, including body posture and shape, to mirror the individual’s movement and reflect back an emotional aspect of the movement (Tortora, 2006).

Self-Regulation

Self-regulation is a process that systemizes and organizes the mind and body of an individual (Siegel, 2015). Self-regulation involves an interconnected system that includes the brain of an individual, their entire body, and their relationships with others (Siegel, 2015).

Therapeutic Movement Relationship

According to Young (2017), the therapeutic movement relationship is “a shared presence of body, mind, and spirit between the dance/movement therapist and client where healing occurs within the safe containment of a creative collaboration, and results in a resonance” (p. 104).

