

Lesley University

DigitalCommons@Lesley

Expressive Therapies Capstone Theses

Graduate School of Arts and Social Sciences
(GSASS)

Spring 5-18-2024

Utilizing Dance Movement Therapy in the Treatment of Functional Neurological Symptom Disorder

Elizabeth Powers
epowers6@lesley.edu

Follow this and additional works at: https://digitalcommons.lesley.edu/expressive_theses



Part of the [Social and Behavioral Sciences Commons](#)

Recommended Citation

Powers, Elizabeth, "Utilizing Dance Movement Therapy in the Treatment of Functional Neurological Symptom Disorder" (2024). *Expressive Therapies Capstone Theses*. 858.

https://digitalcommons.lesley.edu/expressive_theses/858

This Thesis is brought to you for free and open access by the Graduate School of Arts and Social Sciences (GSASS) at DigitalCommons@Lesley. It has been accepted for inclusion in Expressive Therapies Capstone Theses by an authorized administrator of DigitalCommons@Lesley. For more information, please contact digitalcommons@lesley.edu, cvrattos@lesley.edu.

**Utilizing Dance Movement Therapy in the Treatment of Functional Neurological Symptom
Disorder**

Capstone Thesis

Lesley University

May 3rd, 2024

Liz Powers *she/her/hers*

Dance Movement Therapy Specialization

Dr. Meg Chang

Abstract

There is a gap in the literature regarding treatment of pediatric Functional Neurological Symptom Disorder (FNSD) with Dance Movement Therapy (DMT). Functional neurological symptom disorder (FNSD) is a mental illness in which the affected individual experiences somatic symptoms in response to atypical nervous system activation. Dance movement therapy incorporates embodied experiences and physical movement in collaboration with emotional and psychological expression and processing. FNSD symptoms occur when the person's symptoms are poorly integrated (Weiss et al., 2021) and is best treated through a variety of multidisciplinary treatments supporting all aspects of the client (Kim et al., 2022). Treatment often incorporates physical therapy and psychotherapy (Ali et al., 2015) as well as work with the child's family and school personnel to limit attention to symptoms and expectations of functioning despite symptoms (Kozłowska et al., 2023). DMT prioritizes nonverbal communication, awareness of one's body and internal sensations (Lauffenburger, 2020), and helps to facilitate mind-body integration (Shim et al., 2019). Following the review of literature, this thesis recommends specific DMT techniques to support FNSD treatment including body scans, mirroring, embodied imagery, and movement narrativization, and recommends areas for additional research.

Keywords: functional neurological symptom disorder, dance movement therapy, treatment, pediatric, children and adolescents

This author identifies as a white, able-bodied, cis-gender woman from New England of Hispanic and European ancestry.

Utilizing Dance Movement Therapy in the Treatment of Functional Neurological Symptom Disorder

Upon our initial encounter, Ella¹ was seated in a wheelchair, with her upper body bent toward one side, reporting pain in a soft, childlike voice. Ella's functional neurological symptom disorder (FNSD) presented as paralysis, and apart from her facial muscles, Ella was unable to engage in voluntary movement. Hector¹ was a young boy participating in a movement group that I facilitated, when he suddenly began to stumble, fell to the floor, and began shaking in what appeared to be a seizure. I later learned that both Ella's paralysis and Hector's seizures were functional in nature, meaning were not causing damage to the brain or body and were not caused by another medical or neurological condition such as epilepsy. These are two of the many ways in which FNSD can present. I have had the privilege of witnessing young people transform from functional paralysis to running, jumping, and dancing through the support of multidisciplinary treatment inclusive of psychological and physical therapies.

Functional neurological symptom disorder is a mental illness in which the affected individual experiences physical symptoms in response to atypical nervous system activation (Chung et al., 2023). Dance movement therapy incorporates embodied experiences and physical movement in collaboration with emotional and psychological expression and processing. The following thesis will review the literature related to how dance movement therapy might support treatment of FNSD in the pediatric population.

¹The names utilized above are pseudonyms for confidentiality purposes.

The presentation of functional neurological symptom disorder (FNSD), formerly known as conversion disorder, in children and adolescents involves a myriad of physical, somatic symptoms within the context of nervous system dysregulation (Chung et al., 2023). Due to the similarities in signs of FNSD and physical illnesses, it is common for FNSD to be misdiagnosed and mistreated, which often results in worsening FNSD symptoms (Miller et al., 2020). Early treatment of conversion disorder involved Sigmund Freud's psychoanalysis and Pierre Janet's work with somatic symptoms (Gubb, 2010). Current evidence-based approaches to treating FNSD are multidisciplinary and individualized (Miller et al., 2020). Research indicates a correlation between the body's stress response and functional impairment (Chung et al., 2023). Individuals who report high anxiety, depressive, and somatic symptoms have a higher likelihood of functional difficulties (Amendola, 2022). These conclusions suggest the importance of emotional regulation and psychotherapy within FNSD treatment.

The embodied nature of an FNSD diagnosis and the combination of somatic symptoms and nervous system dysregulation, can improve or even resolve with multidisciplinary therapies that include physical and psychological (Kozłowska et al., 2023). However, there is a gap in the literature when it comes to utilizing dance movement therapy as a part of this interdisciplinary treatment approach despite the knowledge that dance movement therapy works with both physical and psychiatric distress simultaneously.

In this thesis I will review the current literature related to the history, current understanding, cultural implications, and treatment of pediatric FNSD, the mind-body connection, DMT, and implications for DMT in the treatment of pediatric FNSD. The literature

will guide proposed methodologies for utilizing dance movement therapy in FNSD treatment and areas for future research will be recommended.

Methods

Research for this literature review was obtained through search of databases from the Lesley University library. Literature was searched relating to pediatric FNSD, FNSD treatment, mind-body connection in FNSD and DMT, DMT with FNSD, and DMT for somatic symptoms. This writer searched for research related to DMT in the treatment of pediatric FNSD and found no relevant research. As a result, literature was selected that explored DMT with related disorders or specific FNSD symptoms. Due to limited research of DMT for related disorders and symptoms in the pediatric population, research with the adult population was presented with the recommendation for future research to include pediatric populations. Literature was selected based on relevance to the research question and date of research, with articles chosen having been published no more than 15 years ago, except for relevant research relating to the history of this topic, which was published over 15 years ago. Research was reviewed and is reported in relation to this thesis' research question of how DMT can be utilized in the treatment of pediatric FNSD in the following literature review.

This writer is a spring 2024 Master of Arts candidate at Lesley University in Cambridge, Massachusetts studying mental health counseling with a dance movement therapy specialization. She has completed two internships in multiple departments at a local children's hospital. Through these experiences she has gained awareness and practice of working within a multidisciplinary treatment team to support youth with FNSD and their families, which sparked her interest in this thesis topic. Any clinical experience referenced in this literature review is

reported as the writer's personal observations within her work under clinical and DMT supervision.

Literature Review

History

Sigmund Freud was the first to utilize the term conversion disorder in reference to a patient's display of physical symptoms which Freud believed to be caused by unconscious distress (Ali et al., 2015). Freud believed that this distress was caused by repressed traumatic memories (Gubb, 2010). Early understanding of conversion disorder, first categorized in the DSM-IV, was conceptualized as the conversion of internal emotional distress into external physical impairments (Weiss et al., 2021). In his psychoanalytic work, Freud theorized that the physical symptom correlated to the type of repressed trauma, demonstrating the conflict of wanting to express the trauma without wanting to remember. While Freud was working with patients to identify repressed experiences directly related to the presenting somatic symptom, Pierre Janet was taking a different approach to somatic symptoms. Janet believed that when extensive trauma occurred, the significant impact on the psyche created somatic symptoms that may not be specifically related to the traumatic experience. Janet argued that because of the potential for trauma to initiate any kind of somatic symptoms, there was not benefit in interpreting the symptom to unlock the repressed memory as Freud believed (Gubb, 2010).

Current Conceptualization

FNSD is a mental illness in which symptoms often seen in neurological disorders present without a biological cause (Weiss et al., 2021). Presently, diagnostic criteria include at least one symptom that alters sensory or voluntary motor functioning that causes clinically significant

distress or functional impairment (See Appendix A for full DSM criteria) (American Psychological Association [APA], 2022). FNSD can cause motor symptoms affecting the limbs, voice, bladder, or digestive tract, dizziness, balance issues, functional seizures, and sensory or cognitive impairments (Kozłowska et al., 2023). The DSM-V-TR provides specifiers based on type of symptoms, length of time the symptoms persist, and whether symptom onset correlates with a psychological stressor, such as acute trauma (APA, 2022). Most common presentations of FNSD include voluntary motor or sensory functioning symptoms, psychogenic non-epileptic seizures (PNES), or a mixture of these symptoms (Weiss et al., 2021).

Due to the individualized nature of FNSD, it can be difficult to conceptualize the disorder. In my clinical experience, I have seen a variety of FNSD presentations that often include a mixture of symptom types. One child with FNSD may have leg weakness and intermittent paralysis, while also experiencing psychogenic non-epileptic seizures (PNES). Another may lose their voice during a FNSD episodes, experience intermittent motor tics, and experience numbness or tingling in certain limbs. I have also witnessed FNSD symptoms shift throughout the course of treatment. A child who initially presented with paralysis was able to regain some motor control, and then began to have PNES episodes. As specific symptom presentations can vary immensely, there is not a single way to conceptualize the appearance of FNSD. What is consistent across all presentations is that the symptoms are truly being experienced by the individual and create distress and/or impairment, while they are not causing any physiological harm to the body.

Presently, FNSD symptoms are understood to be a conditioned response to distress or other stimuli resulting from poor integration of the body's physical, emotional, and cognitive

networks (Weiss et al., 2021). The body's stress response that is triggered by FNSD causes disruption of the pain, motor, and sensory processing areas of the brain (Kim et al., 2022). There is some discrepancy in the literature regarding how FNSD symptoms are understood. Some researchers suggest that FNSD symptoms manifest as a result of emotional distress (Ali et al., 2015), where others suggest that this is an outdated understanding without substantial supporting evidence (Fobian & Elliott, 2019). This understanding suggests that stress-system activation, which may or may not be caused by emotional distress, results in functional symptoms (Kozłowska et al., 2023).

According to Weiss et al. (2021), FNSD can be triggered by trauma; however, approximately one-third of individuals diagnosed with FNSD do not have a history of trauma. Onset and maintenance of FNSD is often unrelated to psychiatric factors, suggesting that psychiatric distress and trauma may create an increased risk for FNSD but are not a direct cause of the disorder. FNSD symptoms seem to be a classically conditioned response to internal or external stimuli, such as a strong emotion or a family member's voice, making it often difficult to identify the symptoms trigger.

One way that FNSD can present involves psychogenic non-epileptic seizures (PNES). Children with PNES may appear to be having what resembles an epileptic seizure; however, with medical testing, epilepsy can be ruled out for these children as the electrical output consistent with epileptic seizures is not present during PNES episodes (Doss & Plioplys, 2018). In some cases, FNSD can present in conjunction with another neurological condition. In these cases, it is essential for physicians to differentiate which elements of the patient's presentation are functional and which are organic (Kozłowska et al., 2022). Recently, preliminary research

has begun to identify structural abnormalities in the brain associated with FNSD (Weiss et al., 2021, p. 92), which has the potential to create a better understanding of the disorder with the support of additional research.

Cultural Implications

According to Bokharey et al. (2023), socio-cultural factors influence the development of FNSD. In cultures that discourage emotional expression, FNSD prevalence is higher. FNSD may often begin as a result of beliefs that are not expressed due to being unacceptable in one's religion or culture. Bokharey et al. (2023) studied cultural implications in FNSD diagnoses with individuals living in Pakistan. The study suggests that religious and cultural values and related beliefs regarding romantic relationships often occurred prior to FNSD symptoms arising, particularly when the individual's belief differed from the cultural and religious values. Literature on culture in relation to FNSD is limited, despite the importance of a biopsychosocial approach to treatment (Vassilopoulos et al., 2023), suggesting the need for further research devoted to cultural implications.

Diagnosis

As FNSD symptoms often appear like those of various neurological disorders, it is often a challenge for healthcare providers to diagnose (Miller et al., 2020). It is common for youth with FNSD to undergo significant, often unnecessary, neurological testing prior to receiving an FNSD diagnosis which can create a substantial burden on the patient, family, and healthcare system (Weiss et al., 2021). When FNSD is diagnosed quickly and individualized treatment begun promptly following diagnosis, treatment outcomes are more likely to be positive (Miller et al., 2020). It is common for FNSD to be misdiagnosed, leading to additional testing and unhelpful

treatment which can increase the severity and frequency of symptoms (Weiss et al., 2021), because over-attending to FNSD symptoms often causes the symptoms to increase (Stager et al., 2023).

During the diagnostic process, it is essential for children and families to receive the expectation of a positive treatment outcome (Kozłowska et al., 2022). Weiss et al. recommend that diagnosis is shared with the patient and family by a multidisciplinary team including a neurologist and psychology professional to provide education surrounding FNSD as incongruent with a neurological disease and psychological and behavioral elements that impact diagnosis and treatment (2021). Effective communication of diagnosis and patient/family acceptance of the diagnosis are key to effective treatment (Doss & Plioplys, 2018).

Treatment

There is currently a lack of research to support evidence-based treatment for pediatric FNSD (Stager et al., 2021; Weiss et al., 2021). However, it is understood that effective treatment is multidisciplinary and treats the holistic child or adolescent by addressing both mind and body (Kim et al., 2022). Weiss et al. suggest that FNSD-oriented psychoeducation is a critical first step to treatment. They find that functional illness is best explained to patients and families as a miscommunication between the brain and body which causes functional symptoms. This explanation can be effective in helping patients and their families to accept their diagnosis, which is critical for effective treatment (2022).

An overview of the current available research emphasizes the importance of a biopsychosocial approach to treating pediatric FNSD (Vassilopoulos et al., 2023). Treatment must address symptoms with the client, family, and school personnel as well as work toward

increasing the client's functioning through the support of interdisciplinary modalities (Weiss et al., 2021). These disciplines often include psychotherapy, physical therapy, and psychopharmacology (Ali et al., 2015). Treatment also involves family members, as over-attending to FNSD symptoms often has adverse effects, leading to an increase in symptoms. When children and their families focus attention away from FNSD symptoms, these symptoms tend to decrease. Family also support treatment by setting expectations for the child to practice appropriate functioning (Kozłowska et al., 2023).

Preliminary research points toward cognitive behavioral therapy (CBT) as an effective therapeutic approach for pediatric FNSD (Weiss et al., 2021). CBT for FNSD includes psychoeducation, stressor identification, symptom management through coping strategies and challenging automatic thoughts, normalizing life routines, and relapse prevention (McFarlane et al., 2019). Learning coping strategies and utilizing behavioral plans that incentivize functioning and withholding preferred activities when functional expectations are not met are often important in treatment (Weiss et al., 2021).

One CBT approach called the stress-system approach involves utilizing body awareness strategies followed by regulation strategies and then engaging in cognitive strategies, as cognitive strategies are easier to engage in when the stress system is regulated (Kozłowska et al., 2023). For example, Kozłowska et al. (2023) provide an example of one client's process that begins with noticing sensations in the body, using calming strategies like diaphragmatic breathing, and then reframing catastrophic thoughts (pp. 21-22). Another form of CBT known as retraining and control therapy (ReACT), involves the client engaging in a behavior that is incompatible with the presenting FNSD symptom, such as actively tensing and relaxing a

tremoring limb (Stager et al., 2023). Both approaches require a shift in attention from FNSD and its symptoms and bringing that focus to a treatment plan which includes regulating activities and distractions to increase sense of self-mastery (Kozłowska et al., 2023).

Development of an individualized treatment plan is key to target the specific needs of the child and family and unique presentation of FNSD symptoms (Vassilopoulos et al., 2022).

For children who engage in avoidance, common in pediatric FNSD, exposure and mindfully sitting with emotions and cognitions can be an effective intervention, while FNSD occurring after trauma may require specific trauma processing treatment (Kozłowska et al., 2023).

Individualized treatment that continually assesses degree of functional impairment, necessary level of care for treatment, and all aspects of the biopsychosocial experience is associated with best treatment outcomes (Vassilopoulos et al., 2022).

Kozłowska et al. (2021) suggest that the current climate of FNSD in healthcare settings is detrimental to clients' treatment. They argue that many healthcare professionals view FNSD as deliberate faking of symptoms on the patient's part, leading them to promote stigmatization of FNSD as being untreatable or fabricated. It is common for clinicians and doctors to avoid diagnosing or treating FNSD due to lack of education or feelings of inadequacy related to their ability to treat FNSD. Through education and awareness building, these researchers believe the healthcare system can shift this culture of care to support effective treatment of FNSD.

Kozłowska et al. (2021) argue that the current healthcare system separates body-based treatment from mind-based treatment, despite contemporary understanding of mind-body connection. As such, collaboration between multidisciplinary treatment team providers is integral to holistic treatment of the child or adolescent with FNSD.

Dance Movement Therapy

Dance Movement Therapy (DMT) is an embodied approach to counseling in which individualized interventions are used to target the client's treatment goals. Dance movement therapy (DMT) focuses on the expressive and communicative nature of movement, by incorporating the emotional, cognitive, and relational aspects of a person, allowing for integration and activation of the holistic individual (Lauffenburger, 2020). By actively addressing the individual's mind and body, DMT can support clients to engage their innate capacity for resilience and healing (Shim et al., 2019). Clients are encouraged to access the implicit knowledge of the body and listen to the body as a tool for meaning making, with the understanding that the body and mind are interconnected and that the body can provide information, by not only conceptualizing the body as a symbol of the mind, but as part of the holistic person (Lauffenburger, 2020).

Evidence suggests that DMT can benefit individuals with complex health conditions both physically and mentally (Shim et al., 2019). Through movement a person can communicate their internal state (Acolin, 2016) and externalize physical symptoms (Shim et al., 2019). By prioritizing nonverbal interactions, DMT can prevent overuse of explanatory language. For example, a client may utilize a general term such as anxiety to describe their experience. DMT can support this client in identifying the sensations and movement impulses that underlie this anxiety, which creates a deeper understanding of the client's experience and enhances treatment potential (Lauffenburger, 2020).

Through observation, a DMT can help a client become aware of what their movement may be revealing about their personality or psychological state (Acolin, 2016). DMTs utilize

psychotherapeutic theories through a kinesthetic lens, by including the physical body and movement in working with psychological constructs (Lauffenburger, 2020). Acolin (2016) suggests that specific movement patterns can be correlated with various diagnoses and emotional states or developmental stages. When a person presents with movement that is incongruent to their developmental stage, this may indicate abnormal development or trauma, providing the opportunity to utilize developmental frameworks to create appropriate treatment interventions in these cases (Acolin, 2016).

Mind-body

Research supports the connection between mind and body as a bidirectional channel of communication in which the experiences of the mind and body each impact the other (Tarsha et al., 2020). It's clear that multidisciplinary treatment including both those that address the mind and body is integral in effectively treating FNSD (Kim et al., 2022; Kozłowska et al., 2023). Children with FNSD often utilize embodied experiences to communicate with treatment providers, making it integral for psychotherapists to respect the centrality of the body and body-based language in FNSD treatment (Kozłowska et al., 2021). Understanding the centrality of the physical body has led to physical therapy being a standard element of pediatric FNSD treatment. However, recent research suggests that physical therapy must be psychologically informed for best outcomes, involving an emphasis of the therapeutic relationship between client and physical therapist, supporting the child's mental well-being, and often integrating play (Kim et al., 2022).

Dance Movement Therapy for FNSD

Knowing that children with FNSD are often better able to communicate psychiatric distress through the report of somatic symptoms or body sensations (Kozłowska et al., 2021), integrating DMT, which can begin with the body and work towards mind-body integration (Shim et al., 2019) would be sensible. However, there is not currently any research that directly studies DMT and pediatric FNSD.

Kozłowska et al. (2023) utilize an intervention that involves becoming aware of the body sensation or level of activation that occurs prior to functional episodes and labeling this physical state with an image or word. The researchers often create body map drawings to provide a visual representation of these processes. Once the client can identify the precursor to a functional episode, the researchers work to shift their attention away from the physical symptoms toward a regulation strategy or other distraction. Connecting to the physical body, building awareness of emotions and body sensations, and affective coping are key mechanisms of DMT (Shim et al., 2019) that correlate with Kozłowska et al.'s intervention described above.

Due to the misunderstood beliefs of FNSD throughout the healthcare system, providers often stigmatize patients with FNSD as they can believe symptoms are being fabricated, leading to these patients not receiving the care that they need (Kozłowska et al., 2021). However:

Most health care professionals working in pediatrics can easily add an FND-informed skill set to their current clinical practice... Mental health clinicians already have the necessary skills to undertake a biopsychosocial assessment and to provide an individual and family-based intervention: they just need to add an understanding of the somatic narrative—the language of the body —and to add management of focus-of-attention and bottom-up regulation strategies to their skill set (Kowzłowska et al., 2022, p.79).

DMTs are already knowledgeable in being able to “use body movement as the primary inroad to their psychotherapeutic work” (American Dance Therapy Association [ADTA], n.d.). By engaging the client with their physical body’s experience, which is generally the most accessible for pediatric clients with FNSD, DMT has the unique potential to meet the client where they are and facilitate working toward their treatment goals through embodied work.

Dance Movement Therapy for Related Disorders

Though there is a lack of research focused on DMT specifically for FNSD, some research exists that includes DMT for related symptoms and disorders. The DSM-V-TR classifies FNSD under the category of “somatic symptom and related disorders,” all of which include significantly distressing or functionally impairing anxiety related to illness or somatic symptoms (APA, 2022). Some DMT research is available that focuses on somatic symptoms such as chronic pain and other medically unexplained symptoms. This research is focused on adult populations, suggesting a gap in relevant pediatric research.

The early DMT research of Silberman-Deihl and Komisaruk (1985) explored the benefit of physical metaphor in the treatment of somatic disorders. The study explored how the body’s manifestation of somatic symptoms, positions, and movements can be reflective of psychological experiences. Metaphors were identified by the DMT following a period of movement observation, after which the client and therapist utilize movement to express, exaggerate, regress, reinterpret, and adaptively integrate the body metaphor through kinesthetic processes. Throughout this process, clients developed an increased sense of self-awareness and eventually developed the ability to verbally express their experiences.

Shim et al. (2019) suggest the benefit of DMT on physical functioning ability for individuals with chronic pain. These individuals observed positive responses to DMT in being able to break out from their chronic pain experience and regaining a sense of control over their lives. Specific ways that DMT was most beneficial to these research participants include releasing physical tension and bottled-up emotions as well as experiencing a broader range of emotions to build on internal resources. Specific mechanisms of DMT were identified as resilience building in individuals with chronic pain, including accessing self-agency, connecting to oneself and others, restructuring, and improving emotional well-being. Additionally, specific interventions were recommended for this population, including narrative movement exercises for individuals to share their story, embodied visualization, and mirroring activities.

Payne and Brooks (2018) developed a method of treating medically unexplained symptoms called “The BodyMind Approach.” They claim that medically unexplained symptoms often go untreated because when medical professionals recommend mental health treatment for physical symptoms, patients often perceive that they are being told their symptoms are in their heads. In addition, common interventions being recommended, such as CBT, are often inaccessible to patients with physical symptoms. The goal of “The BodyMind Approach” is to meet clients where they are by starting with engagement in the physical body and utilizing the understanding that the body and mind are integrated. The approach is based in a variety of DMT concepts including the power of the witness in observing another’s movement as well as being observed, attunement within the group, and embodied imagery and relaxation techniques that support emotion-regulation. They share that the goal of the program is to

support individuals in learning the tools to effectively self-manage their conditions beyond their time in the program.

Knowing that effective treatment for FNSD tends to involve the child's family and those around them (Weiss et al., 2021), it may be beneficial to incorporate family work within DMT. In their work with pediatric medical illness, Tortora and Keren (2023) describe how DMT with the child and caregivers can support shifting nonverbal behaviors following recovery from severe medical illness. Knowing that FNSD often appears to be a medical condition that may be frightening for the child and family and can be a complex process to receive a diagnosis (Miller et al., 2020), family dynamics and intense emotions for all family members are likely to arise. In their DMT work with children and caregivers, Tortora and Keren (2023) work with caregivers to identify non-verbal cues that may be a result of past medical experiences, that can be distressing or emotionally dysregulating to the child. Working with the family unit to identify physical cues associated with emotional responses and to create an open dialogue surrounding these experiences can shift the family dynamic in a positive way (Tortora & Keren, 2023).

Discussion

The intention of this capstone thesis is to suggest the benefit of DMT being incorporated into the treatment of pediatric FNSD. A clear gap in the literature was identified, as no research has been published that studies DMT for pediatric FNSD, despite indications explored in the literature review. The recommendation for psychotherapists to be somatically informed (Kozłowska et al., 2022) and benefit that children with FNSD have received from psychologically informed physical therapy (Kim et al., 2022), engaging in alternative physical interventions when symptoms present (Stager et al., 2023), and developing awareness of internal sensations

and experiences that precede episodes (Kozłowska et al., 2023) all point to a benefit of DMT for these children. As DMT prioritizes non-verbal experiences, utilizes a kinesthetic approach of psychotherapeutic theories (Lauffenburger, 2020), and facilitates mind-body integration (Shim et al., 2019), it is logical that DMT may have positive outcomes in treating pediatric FNSD.

Interventions

Based on the review of the literature and this writer's clinical experience, specific DMT interventions are recommended for pediatric FNSD and warrant further research.

Part of FNSD treatment requires a certain level of body awareness and ability to identify sensations and impulses that one is experiencing (Kozłowska et al., 2023). DMT can support this by walking clients through a body scan of the various areas of their bodies to help build awareness of internal sensations and practice noticing what happens in the body. This could provide increased insight into the exercise recommended by Kozłowska et al. in which a body map is created to visualize areas of activation or sensation that occur prior to FNSD episodes (2023). Utilizing the body scan and map can lead to additional DMT interventions that may support regulation of specific body areas or activation of others depending on the client's unique and individualized experiences. This intervention can provide the foundation to being able to notice precursors to FNSD episodes. Interventions such as those used in ReACT to engage in incompatible activities when an episode is coming on (Stager et al., 2023), may then feel more accessible to the client.

Moving through embodied metaphors could be useful in supporting pediatric FNSD treatment. Previous research indicated that body metaphor was beneficial for adults with somatic symptom disorders (Silberman-Diehl & Komisaruk, 1985) and that children with FNSD

are better able to communicate their emotional experiences through the physical body (Kozłowska et al., 2021). Utilizing body-based metaphor could support youth in identifying their physical experiences and exploring the emotions that connect to those experiences through movement.

Another intervention that would likely benefit the pediatric FNSD population is the creation of movement based narrativization of the client's experiences. This intervention was beneficial for individuals with chronic pain in working toward mind-body integration, meaning making, and insight development relating to their pain experience (Shim et al., 2019). As pediatric FNSD involves a disconnect between the mind and body (Weiss et al., 2021) and the same areas of the brain that are responsible for sensory, motor, and pain processing are activated during FNSD episodes (Kim et al., 2022), it is likely that interventions that support resilience in individuals with chronic pain may benefit children with FNSD.

It is common for young people with FNSD to identify with their illness, making a key part of treatment to establish identity apart from FNSD. One study found that embodied imagery and movement metaphor helped individuals externalize their pain and separate it from themselves (Shim et al., 2019, p. 96). Participants were also able to feel a sense of integration between mind and body and feel empowered to have self-agency in taking steps toward positive change (Shim et al., 2019, p. 97). These techniques may similarly work to support client's to be able to externalize their FNSD and establish alternative aspects of their identity including such as inclusion in particular communities or personal values. Using both imagery and the physical body, the client can have the agency to imagine separating their FNSD symptoms from their current state of being and explore their authentic selves. Over time, the

client may be able to utilize these techniques to mitigate FNSD symptoms when they feel FNSD episodes beginning.

DMT groups may support specific benefits for this population. The DMT construct of witness and the support of a group environment had a positive impact on adults with unexplained medical symptoms (Payne & Brooks, 2018). While it is common for individuals with FNSD to have experienced their symptoms being dismissed by healthcare providers (Kozłowska et al., 2021), group therapy can provide the benefit of a shared experience. DMT can deepen this shared experience by providing the opportunity for clients to see other's authentic selves as well as be seen. This embodied process may provide the opportunity to deepen one's personal understanding of what their body is holding as well as to feel the support of like-minded individuals who have the ability to truly empathize due to shared experiences.

Mirroring is a commonly utilized DMT intervention in which one person's movement or movement qualities are reflected through movement by another person. Mirroring interventions were shown to benefit chronic pain resilience, by giving participants the opportunity to share their experience of chronic pain which is often deeply personal and isolating (Shim et al., 2019). FNSD can also be an isolating diagnosis and is unique for each person experiencing it. As such, mirroring may be a useful way to support youth diagnosed with FNSD in sharing their experience to feel understood and build community. A caveat for mirroring with FNSD is being mindful that mirroring of FNSD symptoms may be counterproductive, as paying attention to symptoms can increase them (Kozłowska et al., 2023). However, knowing that shifting attention and engaging in movement that is incompatible with FNSD symptoms are effective methods of treatment (Stager et al., 2023),

asking the client to mirror the therapist's movement may be a positive way to shift attention away from the symptoms and work towards building the client's movement vocabulary, particularly with movements that are incompatible with the client's specific symptoms.

Family DMT sessions also have potential benefits. It is important to include the client's support systems in FNSD education and treatment (Kozłowska et al., 2023). The diagnostic process of FNSD can be stressful and burdensome for all members of the family unit (Weiss et al., 2021). Family based DMT sessions can work to support emotion regulation and help families identify and shift nonverbal patterns of behavior that disrupt the family dynamic (Tortora & Keren, 2023). Observing how caregivers and clients interact from a nonverbal lens may be able to support family members in developing insight into their embodied presence. Identifying ways that caregivers can be supportive through movement and body language may help to shift the client's experience and warrants future research.

Clinical Experience

Throughout my clinical experience, I have witnessed a variety of movement interventions that support pediatric FNSD treatment. During my work, several common themes have arisen. Table 1 depicts my personal observations of how movement has been supportive when working with youth who have FNSD.

Table 1*Themes Observed in DMT for Pediatric FNSD*

Theme	Interventions	Observations
Utilizing the client's interests	Teaching the therapist to draw animals	Child began to initiate movement of the pencil more freely when excited about outcome of artwork
	Creating silly sound effects	Movement occurred without prompting or encouragement for a child who was experiencing functional paralysis
	Utilizing an interest in another art form (such as poetry) and adding in movement	Working with a medium that supported confidence first, led to slowly being more open with movement and expanding range of motion and embodied confidence

Theme	Interventions	Observations
<p>Comfortable and enjoyable activities</p>	<p>Keeping a beach ball in the air</p>	<p>Restricted movement pattern of near reach with upper extremities quickly shifted to mid, then far reach to hit the beach ball</p>
<p>Externalizing physical sensations or corresponding emotions</p>	<p>Moving a prop with the movement qualities experienced in the body during certain emotional experiences (small, fast, repetitive movement felt in the heartbeat when experiencing anxiety)</p>	<p>With consistent practice of naming and moving the sensations of the body, self-awareness of physical and emotional experiences appeared easier to access</p>

Theme	Interventions	Observations
Self-advocacy/Group leadership	<p>Within the guidance of emotional expression, group members designing the intervention</p> <p>Group activities with props given limited facilitator guidance</p>	<p>Group members identified needs and strategies for support</p> <p>Exploring different ways to utilize props that support regulation or expression</p>

Future Research

Several recommendations for future research are indicated by the literature review. Due to the lack of existing research, it is key that future research focus on the use of DMT in pediatric FNSD. A study that evaluates the impact of DMT being added to the multidisciplinary treatment team compared to a control group of the standard multidisciplinary treatment team of pediatric clients with FNSD would be a good first step. It is also recommended that specific interventions, such as the ones presented in the discussion section of this thesis, be evaluated by research studies. It would be beneficial to study the impact of DMT groups of pediatric FNSD clients as well as individual DMT sessions for this population. As the research points to DMT being a potentially beneficial modality for treatment of pediatric FNSD and no direct research

has currently been published, there is a vast array of future research that can be recommended. As such, beginning with research that directly studies the efficacy of DMT on FNSD within the pediatric population is a key first step.

Conclusion

FNSD is a disorder that impacts the child's holistic being. Children with FNSD are often better able to communicate their experiences by describing their body's sensations and benefit from body-based interventions (Kozłowska et al., 2021). DMT prioritizes the body and physical experience while knowing that the mind and body are interconnected and impact one another (Shim et al., 2019). Despite this correlation, there is a gap in the literature and implementation of pediatric FNSD and DMT. Additional research is necessary to explore specific ways in which DMT can be utilized to support pediatric FNSD treatment. This thesis presented a variety of interventions that may benefit this population and warrant further research. The unique ability of DMT to facilitate therapeutic work through the lens of the body and kinesthetic experience, has the potential to benefit treatment outcomes in youth with FNSD who are often already using non-verbal and body-based communication to express their experiences.

Acknowledgments

My gratitude goes to everyone who has supported my learning and interest in this topic. Special thanks to the Healing Arts and Partial Hospitalization Program departments at Hasbro Children's Hospital. My appreciation goes to my thesis consultant and dance movement therapy supervisor Melody Gamba, LMHC, BC-DMT for all her encouragement and insight in helping me to format and clarify my language. Lastly, many thanks to my academic advisor and thesis advisor Dr. Meg Chang, EdD, BC-DMT, LCAT who has provided inspiration and support throughout my time at Lesley as well as each of the iterations of this thesis.

References

- Acolin, J. (2016). The mind–body connection in dance/movement therapy: Theory and empirical support. *American Journal of Dance Therapy, 38*, 311–333.
<https://doi.org/10.1007/s10465-016-9222-4>
- Ali, S., Jabeen, S., Pate, R. J., Shahid, M., Chinala, S., Nathani, M., & Shah, R. (2015). Conversion disorder- mind versus body: A review. *Innovations in clinical neuroscience, 12*(5-6), 27–33. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4479361/>
- Amendola, S., Hengartner, M. P., Spensieri, V., Grillo, L., & Cerutti, R. (2022). Patterns of internalizing symptoms and disability functioning in children and adolescents. *European Child & Adolescent Psychiatry, 31*(9), 1455–1464. <https://doi-org.ezproxyles.flo.org/10.1007/s00787-021-01789-4>
- American Dance Therapy Association [ADTA]. (n.d.). What is dance/movement therapy? <https://adta.memberclicks.net/what-is-dancemovement-therapy>
- American Psychological Association [APA]. (2022). *Diagnostic and statistical manual of mental disorders: DSM-5-TR*. (5th edition, text revision). American Psychological Association Publishing.
- Bokharey, I. Z., Fahim, U., Tahir, K., & Shireen, Z. (2023). Addressing the elephant in the room: understanding functional neurological symptom disorder through the lens of culture and religion. *Frontiers in Neurology, 14*. <https://doi.org/10.3389/fneur.2023.1174364>
- Chung, J., Mukerji, S., & Kozłowska, K. (2023). Cortisol and α -amylase awakening response in children and adolescents with functional neurological (conversion) disorder. *Australian*

- and *New Zealand Journal of Psychiatry* 57(1), 115-129. <https://doi-org.ezproxyles.flo.org/10.1177/00048674221082520>
- Doss, J. L., & Plioplys, S. (2018). Pediatric psychogenic nonepileptic seizures: A concise review. *Child and Adolescent Psychiatric Clinics of North America*, 27(1), 53–61. <https://doi.org/10.1016/j.chc.2017.08.007>
- Fobian, A. D., & Elliott, L. (2019). A review of functional neurological symptom disorder etiology and the integrated etiological summary model. *Journal of Psychiatry & Neuroscience*, 44(1), 8–18. <https://doi.org/10.1503/jpn.170190>
- Gubb, K. (2010). The sense of bodily symptoms. *Psycho-Analytic Psychotherapy in South Africa*, 18(2), 32. <https://search-ebSCOhost-com.ezproxyles.flo.org/login.aspx?direct=true&AuthType=cookie,ip&db=edsgao&AN=edsgcl.380146086&site=eds-live&scope=site>.
- Kim, Y., Gray, N., Jones, A., Scher, S., & Kozłowska, K. (2022). The role of physiotherapy in the management of functional neurological disorder in children and adolescents, *Seminars in Pediatric Neurology*, 41. <https://doi.org/10.1016/j.spen.2021.100947>
- Kozłowska, K., Chudleigh, C., Savage, B., Hawkes, C., Scher, S., & Nunn, K. P. (2022). Evidence-based mind-body interventions for children and adolescents with functional neurological disorder. *Harvard Review of Psychiatry*, 31(2), 60–82. <https://doi.org/10.1097/HRP.0000000000000358>
- Kozłowska, K., Sawchuk, T., Waugh, J. L., Helgeland, H., Baker, J., Scher, S., & Fobian, A. D. (2021). Changing the culture of care for children and adolescents with functional

neurological disorder. *Epilepsy and Behavior Reports*, 16.

<https://doi.org/10.1016/j.ebr.2021.100486>

Kozłowska, K., Schollar-Root, O., Savage, B., Hawkes, C., Chudleigh, C., Raghunandan, J., Scher, S., & Helgeland, H. (2023). Illness-promoting psychological processes in children and adolescents with functional neurological disorder. *Children*, 10(11). <https://doi-org.ezproxyles.flo.org/10.3390/children10111724>

Lauffenburger, S.K. (2020). 'Something more': The unique features of dance movement therapy/psychotherapy. *American Journal of Dance Therapy* 42, 16–32.

<https://doi.org/10.1007/s10465-020-09321-y>

McFarlane, F. A., Allcott-Watson, H., Hadji-Michael, M., McAllister, E., Stark, D., Reilly, C., Bennett, S. D., McWilliams, A., & Heyman, I. (2019). Cognitive-behavioural treatment of functional neurological symptoms (conversion disorder) in children and adolescents: A case series. *European Journal of Paediatric Neurology*, 23(2), 317–328.

<https://doi.org/10.1016/j.ejpn.2018.12.002>

Miller, L., Archer, R. L., & Kapoor, N. (2020). Conversion disorder: Early diagnosis and personalized therapy plan is the key. *Case Reports in Neurological Medicine*. <https://doi-org.ezproxyles.flo.org/10.1155/2020/1967581>

<https://doi-org.ezproxyles.flo.org/10.1155/2020/1967581>

Payne, H., & Brooks, S. (2018). Different strokes for different folks: The BodyMind Approach as a learning tool for patients with medically unexplained symptoms to self-

manage. *Frontiers in Psychology*, 9, 2222. <https://doi.org/10.3389/fpsyg.2018.02222>

- Shim, M., Goodill, S., & Bradt, J. (2019). Mechanisms of dance/movement therapy for building resilience in people experiencing chronic pain. *American Journal of Dance Therapy* 41, 87–112. <https://doi.org/10.1007/s10465-019-09294-7>
- Silberman-Diehl, L. J. & Komisaruk, B. D. (1985). Treating psychogenic somatic disorders through body metaphor, *American Journal of Dance Therapy*, 8, 37-45. <https://doi.org/10.1007/BF02251440>
- Stager, L., Szaflarski, J.P., & Fobian, A.D. (2021). One-year follow-up of treatment outcomes and patient opinions of Retraining and Control Therapy (ReACT) for pediatric functional seizures, *Epilepsy & Behavior Reports*, 16. <https://doi.org/10.1016/j.ebr.2021.100503>
- Stager, L., Mueller, C., Morriss, S., Szaflarski, J. P., & Fobian, A. D. (2023). Sense of control, selective attention, cognitive inhibition, and psychosocial outcomes after Retraining and Control Therapy (ReACT) in pediatric functional seizures. *Epilepsy & Behavior*, 142, 109143. <https://doi.org/10.1016/j.yebeh.2023.109143>
- Tarsha, M. S., Park, S., & Tortora, S. (2020). Body-centered interventions for psychopathological conditions: A review. *Frontiers Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.02907>
- Tortora, S. & Keren, M. (2023). Long-term effects of chronic life-threatening pediatric illness on later adjustment and their clinical implications. In S. Torora (Ed.), *Dance Movement Therapy for Infants and Young Children with Medical Illness: Treating Somatic and Psychic Distress* (101-117). Routledge. <https://doi.org/10.4324/9781003134800-8>

Vassilopoulos, A., Mohammad, S., Dure, L., Kozłowska, K., & Fobian, A. D. (2022). Treatment approaches for functional neurological disorders in children. *Current Treatment Options in Neurology*, 24(2), 77–97. <https://doi.org/10.1007/s11940-022-00708-5>

Weiss, K.E., Steinman, K.J., Kodish, I., Slim, L., Yurs, S., Steggall, C., & Fobian, A. (2021). Functional neurological symptom disorder in children and adolescents within medical settings. *Journal of Clinical Psychology in Medical Settings* 28, 90–101. <https://doi.org/10.1007/s10880-020-09736-2>

Appendix A

DSM-V-TR Criteria for FNSD

Functional Neurological Symptom Disorder (Conversion Disorder)

Diagnostic Criteria

- A. One or more symptoms of altered voluntary motor or sensory function.
- B. Clinical findings provide evidence of incompatibility between the symptom and recognized neurological or medical conditions.
- C. The symptom or deficit is not better explained by another medical or mental disorder.
- D. The symptom or deficit causes clinically significant distress or impairment in social, occupational, or other important areas of functioning or warrants medical evaluation.

Coding note: The ICD-10-CM code depends on the symptom type (see below).

Specify symptom type:

- **(F44.4) With weakness or paralysis**
- **(F44.4) With abnormal movement** (e.g., tremor, dystonia, myoclonus, gait disorder)
- **(F44.4) With swallowing symptoms**
- **(F44.4) With speech symptom** (e.g., dysphonia, slurred speech)
- **(F44.5) With attacks or seizures**
- **(F44.6) With anesthesia or sensory loss**
- **(F44.6) With special sensory symptom** (e.g., visual, olfactory, or hearing disturbance)
- **(F44.7) With mixed symptoms**

Specify if:

- **Acute episode:** Symptoms present for less than 6 months.

- **Persistent:** Symptoms occurring for 6 months or more.

Specify if:

- **With psychological stressor** (*specify stressor*)
- **Without psychological stressor**

(APA, 2022, section 2, chapter 10: Somatic Symptom and Related Disorders)

THESIS APPROVAL FORM

Lesley University
Graduate School of Arts & Social Sciences
Expressive Therapies Division
Master of Arts in Clinical Mental Health Counseling: Dance/Movement Therapy, MA

Student's Name: Elizabeth Powers

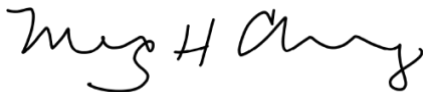
Type of Project: Thesis

Title: Utilizing Dance Movement Therapy in the Treatment of Functional Neurological Symptom Disorder

Date of Graduation: May 18th, 2024

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

Thesis Advisor: Meg H. Chang, EdD, BC-DMT

A handwritten signature in black ink that reads "Meg H. Chang". The signature is written in a cursive style with a large, stylized 'M' and 'C'.