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Running Head: DANCE/MOVEMENT THERAPY WITH LINE WORKERS

A Specialized Dance/Movement Therapy Assessment and Proposed Plan for
Addressing the Physical and Emotional Well-being of Line Workers

Capstone Thesis

Lesley University

5 May 2020

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Dance/Movement Therapy

Abstract

This capstone thesis utilized qualitative methods to explore the experiences of National Grid linemen for the purposes of creating a dance/movement therapy warm-up. Information was gathered through individual meetings, where questions about participants' physical, mental, and emotional health were discussed in relation to their specific occupation. From the information gathered, six themes were identified. To address the recognized issues, eight proposed warm-ups were created. The warm-ups, specifically crafted from participants' firsthand accounts, are rooted in both Laban Movement Analysis principles and Bartineff Fundamentals. Sessions are intended to be run by a licensed dance/movement therapist at the beginning of each workday and would last for approximately 15 minutes. Future implications include further research, which would explore the effectiveness and perceived benefits of created sessions with line workers to further explore the benefits of dance/movement therapy with those who comprise this hard-working population.

Keywords: Linemen, line workers, movement observation and analysis, dance/movement therapy, DMT

A Specialized Dance/Movement Therapy Assessment and Proposed Plan for
Addressing the Physical and Emotional Well-being of Line Workers

Introduction

Being a lineman, it takes a special breed. . . I've known a lot of [men] who grow old and retire, and are really broke down, and that's because of the hard life that you live as lineman.

- American Electric Power, 2010

It is important for researchers to identify their epistemology and ontology. As the daughter and granddaughter of National Grid line workers, this writer has a personal connection to the subject. This includes firsthand observation of the physical, mental, and emotional tolls the job can have on an individual. The phone rang at all hours of the day or night. My father would be away for holidays, birthdays, or special occasions due to storm duty or a blown transformer. During his career as a line worker, he endured concussions, surgeries, and accidents. Members of the community have belittled my father's profession as they say the lights are not turned on soon enough, despite the nor'easter or other weather system. Little do they know that, during that weather, he would need to be away from his family for days or even weeks at a time.

This writer is also a dancer, someone who has studied dance and movement for more than twenty years. This writer holds a B.A. in dance performance and will soon be a registered dance/movement therapist, someone who uses movement to improve the physical, mental, and emotional well-being of individuals. A few years ago, in conversation with my father, dance/movement therapy (DMT) and its place in his

profession became clear. In this work, DMT will be explored as a potential tool to strengthen the body-mind-spirit connection of line workers.

In 2018, 119,400 men and women identified as electrical power-line installers and repairers. Electrical line workers install and maintain the power grid. They are required to work with the high-voltage electric current (US Department of Labor, 2019).

Electrical power-line workers maintain the interstate power grid and work in crews that are required travel to different locations throughout their region to install, maintain, or repair lines. Workers employed by local utilities work mainly with lower voltage distribution lines and often must maintain equipment such as transformers, voltage regulators, and switches. Line workers are regularly called to duty for installation and routine maintenance tasks, but their services are urgently required in storms, natural disasters, and other disaster situations such as automobile accidents or house fires (US Department of Labor, 2019).

Aside from the physical challenges and demands of the job, there is danger in working with electrically charged wires, which, could have fatal consequences:

Between 2003 and 2007, more than 1200 electrical workers were killed by contact with electricity. Forty-three percent of those injuries were caused by contact with overhead lines and 27% were the result of workers coming into contact with wiring, transformers and other electrical components. (Fischback, 2017, p. 40D)

Severe injuries are a major part of this job, and they are not all due to electrocution or other power-related injuries. According to Sahl, Kelsh, Haines, Sands, and Kraus (1997), "Injuries to the trunk and sprains and strains are the predominant

injury categories” (p. 223). In many cases, though, it is more than just sprains and strains: Padmanathan, Joseph, Omar, and Nawawi (2016) point out the growing prevalence of musculoskeletal disorders among line workers. These disorders, likely caused due to static and/or awkward posture, force, vibration, and temperature, can then lead to increased sick-time and decreased productivity amongst workers (p.726).

Electrical power-line installers are referred to as linemen by National Grid, the main electricity and gas company in the northeastern states including Rhode Island, Massachusetts, and New York. While there have been some efforts to improve the safety of linemen, such as the International Lineman's Rodeo Association (ILRA), which “. . . strives to improve linemen's safety throughout North America” (Fischback, 2017, p. 40D), there is a lack of support for their mind-body-spirit connection, as this population completes their taxing job duties and responsibilities. According to Winters Fisher (2019), preliminary evidence suggests that some mind-body approaches have shown positive results for symptoms of stress, insomnia, and chronic pain. Use of dance and movement to increase movement awareness in individuals, such as line workers, whose jobs are physically taking, could possibly mitigate pain later in life.

The American Dance Therapy Association (2014) defines dance/movement therapy (DMT) as “the psychotherapeutic use of movement to promote emotional, social, cognitive, and physical integration of the individual, for the purpose of improving health and well-being” (para. 1). The application of DMT with labor-intensive occupations is not currently utilized, making it difficult to find current information. DMT in occupational settings is not a new concept, however, as Rudolf Laban, the originator of the observation system used throughout this capstone thesis, applied his theories to

improve efficiency and improve war efforts with factory workers (Trostle, 2019). The information and insights gathered through the interviews provided some context to bring services to this population. Then, the movements and physical job requirements of line workers were observed and analyzed, utilizing movement observation and analysis, to create appropriate movement sessions to reinforce fundamental body connections, increase mobility, strengthen applicable muscle groups, expand body awareness, and provide an outlet for self-care along with opportunities for recuperation to ease all of the line workers' exertion.

Literature Review

The movement and observation tool utilized in this work is defined by the Laban/Bartenieff Institute of Movement Studies (2020) as, “a method and language for describing, visualizing, interpreting and documenting all varieties of human movement . . . [this] method uses a multidisciplinary approach, incorporating contributions from anatomy, kinesiology, psychology” (para. 1). While this tool is not perfect, it is widely utilized in the field of DMT.

A Look Back: Rudolf Laban

Man must move in order to satisfy needs. He aims by his movement at something of value to him. It is easy to perceive the aim of a person's movement if it is directed to some tangible object. Yet there also exist intangible values that inspire movement.

-Rudolph Laban, 1971

Rudolph Laban and his theories originated in the 1900s (Levy, 1992). Laban is described by Chaiklin and Wengrower (2009), as “. . . a dancer, creator of dances, and

movement choirs; an artist, architect, mathematician, and teacher” (p. 220). His lifelong investigation of movement began in central Europe. With his background in ballet, fencing, and modern dance forms, Laban created many large movement choirs, which is a large group of individuals moving together. Laban was invited to create these large-scale works for many festivals and community events. This continued until the Nazis invaded Germany (Trostle, 2019).

Laban later escaped to England where he met F. C. Lawrence, who was interested in Laban’s ideas about movement. Together, they applied the concepts to help factory workers improve efficiency to improve war efforts. This work was pivotal to Laban’s work and later thesis on qualities of human effort (Trostle, 2019). Laban’s work in industrial factories was one of the inspirations to the creation of the current capstone thesis, as dance/movement therapy in the industrial setting may be needed but not currently served.

Laban/Bartenieff Model

The history and complete system of Laban Movement Analysis (LMA) and Bartenieff Fundamentals (BF) are far too detailed and comprehensive to fully cover in this work. As described by Levy (1966),

Laban’s teaching provided a method of movement analysis and a system of notation that placed dance therapists on their own professional ground, giving them the language for describing patients’ movements and eliminating the need to rely on less accurate jargon borrowed from other disciplines. (p. 109)

While Laban was the originator of the method, this system for observation and analysis has expanded due to other professionals: notably Warren Lamb, his protégé

who expanded upon his theory of shape, and Irmgard Bartenieff, who utilized her skills as a physical therapist to expand upon the body aspect of the LMA system. Bartenieff created her own approach related to the body, which is based on both anatomical and developmental model. Bartenieff Fundamentals, which “. . . develops movement efficiency and expressiveness by emphasizing the spatial aspects of movement and incorporating them into efficient motor organization” (Levy, 1966, p.113).

From the above-mentioned originators comes the current LMA system, which observes and analyzes body, effort, space, and shape (BESS). The body is the “what.” When looking at this aspect of BESS, the observer will notice which parts of the body are held versus which parts are moving, note if the body movement is postural or gestural, and notice where movement is initiated (Chaiklin and Wengrower, 2009). Then there are the fundamental body connections: the head/tail, the scapula/arm, the thigh/pelvis, the heel/coccyx, right and left body halves, and the upper/lower or the diagonal connection. Notably, Bartenieff created basic six exercises to reinforce the Bartenieff Fundamentals, which are accessible ways to become more aware of one’s own body, and better feel these body connections, and move through them in a more efficient and effective way. These exercises will be utilized when creating the proposed plan (Levy, 1966).

Space refers to the “where.” This is the observation to the individual’s kinesphere: an area of space around a person’s body. Are they moving primarily in the near space, mid-space, or far space? Are they utilizing high, medium, or deep space? Beyond that, this aspect of BESS looks at the dimensions and planes a person is moving in: vertical (door plane), horizontal plane (table plane), or sagittal (wheel plane).

Effort, or the “how,” looks at the quality of the movement: what is the flow (free versus bound) weight (strong versus light), space/focus (direct versus indirect), and time (quick versus sustained)? Lastly, shape examines how the body relates to the world. Shape can be described as shape flow, a relationship of the body to itself; directional shape (spoking or arching), a relationship between the body and the environment; and shaping, a rich interaction between self and others. Together, this language makes up the comprehensive movement system.

Limits of Current Movement Assessment Systems

Laban’s system is largely based on European western cultures. Dance/movement therapists must be aware that their subjective self and conscious and subconscious biases affect their observation and analysis. In fact, the assessment tools that are currently in place could be described as a bit biased: not yet landing at a place where all peoples’ movement backgrounds, culture, gender and socio-economic status are embodied in an inclusive way. As suggested by Caldwell (2013), “. . . movement assessment may unconsciously enact bias by subtly pathologizing how the ‘different’ body moves and acts” (p. 183). Simply put, this western-based assessment is not likely applicable to all, as there are several differences in gestures, movement norms, and styles throughout the world. Dance/movement therapists must be aware of this and be prepared to be expansive in their assessment process. For example, eye contact: in many westernized cultures, eye-contact is seen as a sign of respect, whereas in other cultures, such as Hispanic, Asian, Middle Eastern, and Native American culture, eye contact is seen as disrespectful. Through the movement observation and analysis

process, it is important for the observer to be aware of their cultural lens and really listen to their client's lived experiences.

These biases have potential consequences and might affect a client's success in therapy. If power and privilege is not recognized, or a lens of diversity is not utilized by the dance/movement therapist, a client's movement could be mislabeled or misjudged (Caldwell, 2013).

What can be done about the inequality in movement assessments? As mentioned previously, there is no one system that is enough for movement observation and analysis, although dance/movement therapists continue to explore other, more inclusive options for observation and analysis. In the meantime, though, it is important that clinicians be constantly aware of power, privilege, and oppression and what that means for clients and their movements, as they utilize a culturally sensitive eye when assessing movement. Caldwell (2013) suggested

First, that people move in ways that express not only their personality and relative health but also their culture, race, gender identity, sexual orientation, class, ability, and power dynamics with an observer. Second, that movement observation and assessment tools, as well as the practitioners who use them, must constantly and vigilantly self-reflect (and accept reflection from others) for potential bias in these areas. This includes training programs, research, and clinical applications. Third, other DMT methods of observation and assessment that validate and include a client/participant's inner, lived experiences need to be developed and used alongside standard movement observation and assessment tools. (pp. 196-197)

Physical Benefits of Dance/Movement Therapy

Blázquez, Guillamó, and Javierre (2010) found that dance/movement therapy increased perceived personal physical and psychological well-being in female patients with chronic fatigue syndrome (CFS). The study took place over a four-month span, with sessions lasting for one hour, which shows the longer-term effects of DMT. Participants ranged in age from 35 to 55 and were all diagnosed with CFS.

Blázquez, Guillamó, and Javierre (2010) detailed exactly how sessions were executed and what topics and themes were covered. The in-depth description provided could be utilized to render the same positive benefits. The 16-week program focused on five objectives: body image through building body awareness and reduce somatic stress; sensoriality through strengthening the body using flexibility, body control, and awareness of the body in relation to space; creativity through crafting new ways to engage the connection of body, space, environment, music, and others; social, or interacting with others in the here and now; and individual, while being aware of one's own thoughts and quality of life (Blázquez et al., 2010). According to Blázquez, Guillamó, and Javierre (2010), "Dance can improve quality of life by strengthening the immune system through muscular action and through the activation of various physiological responses. It can also eliminate tension, chronic fatigue, and other disabling conditions resulting from stress situations" (p. 285).

Some limits to the usage of this information include the difference in population studied, the limited sample size of just seven participants, and the lack of a control group. However, physical performance and functional capacity, which was measured by cardiovascular monitoring, was not positively affected by the sessions. This was the

only marker used to measure physical performance, which is a limited lens.

Surprisingly, there was no use of Laban or Bartenieff teachings in the exploration of the body.

Krampe (2013) focused on the effect of dance-based therapy being utilized to increase balance and mobility. In this study, 27 participants, with ages ranging from 63-98, were led through 18- 45-minute sessions three times a week for six weeks. These sessions began with a 10-minute warm-up containing lymphatic movements, 30-minute active movement dance-based activity, and finishing with five minutes of cooling down. Multidirectional reach, velocity, step length differential, and a Functional Ambulation Profile were measured before and after each of the dance-based sessions (Krampe, 2013).

Krampe's (2013) research focused on the use of the Lebed Method™ (TLM), a dance-based therapy program which has been used since 2000 with individuals who are physically limited. The sessions were based on choreographed ballet and jazz steps and incorporated party-type props including hats and boas. It was concluded that the use of dance-based therapy with this population had a mild to moderate effect on balance and mobility.

The principle investor of Krampe's (2013) study was an individual who is certified in TLM, but not a registered or board-certified dance/movement therapist. According to the Lymphology Association of North America, or L.A.N.A, (2020), a three-day course allows a participant to become certified as a Lebed Method™ instructor.

Bastug (2018), examined the “. . . body composition, flexibility, balance and concentration characteristics of dance exercise” (p. 210). This study focused on a much

larger (269 students) and younger (with an average age of 20.59) sample. In this work, the experimental group participated in a 30-70 minute Latin-based dance class once a week for 12 weeks, while the control group did not take any classes. Height, body weight, flexibility, balance, and concentration were assessed at the beginning and the end of the experiment. The study acknowledged that there was a noteworthy difference among the experimental group in regard to body weight, BMI, flexibility, balance, and concentration (Bastug, 2018).

Bastug's (2018) method focused on the use of Latin-based dances, including Salsa, Zumba, and modern dance. Like Krampe (2013), Bastug (2018) did not utilize a dance/movement therapist in the sessions. Indeed, there was no list of who was to lead the 12 dance sessions. Bastug stated, "Dance, a multidimensional experience, involving emotional, physical, spiritual and social elements (Murciaa et al., 2010) can raise perceived levels of physical and mental well-being and social contact (Kierr, 2011), including among those diagnosed with depression and anxiety (Payne & Stott, 2010)" (p. 211), but failed to address any emotional, spiritual, or social elements of the published work.

Pater (2018), the managing director and founder of MoveSMART, discussed the role movement plays in safety, health, and durability in workers. Pater (2018) discussed the prevalence of organizations that rely on aging workforces, whose expertise would be difficult to match, making the safety of employees a priority. The work notes four movements associated with longevity: balance, gripping strength, walking speed, and the ability to rise from the floor. Although the above-mentioned movements are important to practice maintaining strength and ensure longevity, there are several more

industry-specific movements that should be considered. In the case of line workers, shoulder extension and flexion and core strength to support the spine would be fitting.

Connecting the Mind, Body, and Spirit Through Dance/Movement Therapy

Quiroga, Kreutz, Clift, and Bongard (2010) discussed the perceived effects of dance on the whole self: body, mind, and spirit. This online-study included 475 adult non-professional, but experienced, dancers. According to the research, “. . . [P]articipants reported dancing to have positive influences on self-esteem, social relations and spirituality as well as providing a significant coping strategy for daily stress and difficult times” (p. 159).

Using both qualitative and quantitative sources, this article focused on the emotional, creative, and physical benefits of dancing, as well as the well-being and self-meaning it evokes for participants. These benefits were detailed so greatly beyond the physical, emotional, social, etc. Instead, it offered explicit information as to how individuals felt that dance improves these dimensions of their well-being. The categories of perceived benefits include physical benefits, emotional benefits, self-esteem, social benefits, coping strategy building, and spiritual benefits. The expansive participant sample allowed for an abundance of information to detail individuals' personal experiences with movement and personal well-being (Quiroga, et al., 2010).

As addressed by the authors, this online questionnaire was sent out via mailing lists, which left room for inaccuracy (Quiroga, et al., 2010). For example, what would prevent someone who received the questionnaire in error from submitting false answers?

Winters Fisher (2019) presented a “. . . pilot case study [that was] an analysis of an existing dance/movement therapy-based mind-body wellness program. . . part of a larger integrative program for military service members with traumatic brain injury (TBI) and psychological health conditions” (p. 52). In this case study, the author explores dance and movement in-depth, with its healing and holistic properties, with the military and veteran population. Patients participated in two individual sessions and 12 mind-body sessions. Winters Fisher’s (2019) work found, “an apparent development of mind-body awareness and confidence with mind-body skills for patients in the program” (p. 57).

Winters Fisher, a board-certified dance/movement therapist, utilized qualitative, quantitative, and arts-based research methodologies. This use of person-centeredness, holistic treatment, and interdisciplinary focus that was included in the presented work, mirrors the formulation of this capstone thesis. Similar to that of the current capstone thesis, Winters Fisher (2019) utilized Laban movement analysis and participant self-reports to gain and organize data.

Dance and Movement as Welcoming Ritual

Kawano’s (2018) information was collected using arts-based methods and qualitative methodology that was “. . . informed by an interpretive phenomenological analysis (IPA) framework, which acknowledges the active role of the researcher as the analyst in creating meaning of participants’ accounts of their experiences” (p. 2). There were 11 participants, all female, in this particular hour-long sampling.

Kawano (2018), who described ritual as a framework to provide containment, focused on the benefits of a welcoming ceremony, or an embodied (body based),

ritualistic way to begin an event. Kawano (2018) examined a specific gathering that takes place at the American Dance Therapy Association (ADTA) conference. Through Laban movement assessment, survey, and interviews, the conclusion of this study points to potential benefits of incorporating collective embodied interventions. Rituals, described as, “. . . sources for communicating socio-cultural knowledge” (p. 2), would be a needed addition in the proposed DMT plan, as National Grid linemen have a shared culture that should be celebrated.

There are no studies utilizing dance/movement therapy with line workers, meaning there is a gap in the literature. While not directly applicable, studies have shown the incredible benefits of movement for other populations. The above-mentioned studies specifically connect with the potential objectives of the proposed plan: strengthening the physical body with the use of movement and integration of Laban’s fundamental body connections; connection and integration of mind, body and spirit; self-awareness while completing tasks; understanding the exertion/recuperation principle to integrate body knowledge while on the job; stress management and relief; and creation of a ritualized way to begin the day, connect with co-workers, and prime the self for the day ahead.

Methods

The purpose of this capstone thesis is to identify needs to create a plan to better serve the physical, mental and emotional needs of line workers. To best accomplish this directive, a comprehensive movement observation and analysis of line workers’ required job movements through video was executed. With the information gathered

through that analysis, an interview was created for Rhode Island-based National Grid line workers to address physical, mental, and emotional health information.

Observation of Required Job Tasks

Creating this system will require learning about line workers: their job responsibilities and tasks, daily movements and physical requirements, and first-hand accounts of their experiences, and how their occupation affects their daily lives. Then, this information will be used to craft a series of eight dance/movement sessions, approximately 15 minutes in length, which will be intended for use at the beginning of the workday to prepare employees for their shift.

To actually see what the line worker does, this researcher found videos online of two of the line workers' required day-to-day duties: overhead work and climbing poles. The principles of body, effort, shape, and space (BESS) were utilized as the lens for the following observation and assessment:

Body. The two videos viewed, the instructional example of climbing from Blue Ridge Community and Technical College (2017) and the example of overhead work from The Providence Journal (2013), showed instances of each of the fundamental body connections. In the climbing demonstration, there were a great deal of Arm/Scapula, Thigh/Pelvis, Upper/Lower, and Head/Tail body connections. There was, of course, the Thigh/Pelvis movement one would expect from climbing an object, but also another aspect of thigh usage when the line worker needs to use the climbers to strike the pole. In the overhead video, there was a great deal of Arm/Scapula. This Arm/Scapula movement appears to be taxing, which could potentially lead to worker injuries if the body is not primed for the movement.

Effort. In both demonstrations, there is an emphasis on movements that are strong, direct, bound, and sustained. While there are moments of deviance from these trends, these were certainly the majority. These effort qualities are amongst the condensing efforts, and this writer suspects that it is true for much of the work of a line worker. Taking into consideration the danger of high voltage, these sustained, direct movements are necessary for safety and care.

Shape. When climbing, the line workers utilize a great deal of carving. The presenter was carving and utilizing the space around the pole in what seems like a rich interaction. In the overhead demonstration, the workers appeared to be utilizing directional arcs and spokes: a movement that connects the individual to their environment. While there were glimpses of shape flow, the majority of the work appeared to revolve around carving and directional shapes.

Space. In this area of observation, there was a great deal of time spent in the wheel plane: utilizing both the front space for reaching, and the backspace during moments of recuperation as the line worker would lean back into the harness. In the overhead video, depending on the height of the bucket, the table plane was utilized. In both videos, the line workers utilized mostly mid-space to far space kinesphere and spent a great deal of time in the high space. Although there will be variations in moving through the line workers' tasks, movement tasks must be executed to do the job.

These observations serve as a large predictor of the crafting of the proposed plan. With the above-mentioned information, conclusions were drawn about disconnections, preferences, or patterns in the workers' movement. Then, utilizing dance/movement therapy principles to pinpoint ways to support required movements,

interventions will be created. It is important to keep in mind that once the proposed plan is created, it will take time to teach participants how to effectively embody and utilize these principles as intended. This learning curve will likely be the “body” portion of BESS. Ideally, after safely and effectively creating a movement vocabulary that will help stretch and strengthen the workers, themes surrounding effort, space and shape may begin to surface.

Interview Process

For this capstone thesis, 13 National Grid linemen were contacted and individually interviewed to compile a more accurate picture of their day-to-day experiences. Each interview lasted approximately 15 minutes and covered a variety of questions about participants’ physical health, mental/emotional health, and how their jobs affected their overall well-being. The interview form utilized was created by the writer of this capstone thesis and was informed by research. To insure questions were relevant and easy to understand, and to assure important concerns were addressed, the writer consulted with a line worker. Participants were asked a series of questions to better understand their physical, mental, and emotional stressors, and this writer notated their answers on pre-printed sheets. See Appendix for the full interview questions.

The line workers interviewed were all male. Their ages varied from 25 to 61, with the median age being 52. They had varied experience and specific job titles (i.e. Troubleman, Crew Leader, First-Class Linemen, Second-Class Linemen, and Apprentice). Their time with National Grid ranged from 2 years to 35 years of employment with National Grid. Each person painted a rich picture of what their

physical, mental, and emotional struggles are in their day-to-day job tasks. With this information, the dance/movement therapy warm-up interventions will be created.

Results

Physical Health Findings

Each interviewee described their own physical self-care. For some, stretching was an everyday activity, whereas some noted to only stretching “. . . Every other week, at most.” Their stretching routines were described as some basic stagnant stretches, that were for the most part, unsupervised by a professional. One individual noted, “Some departments have specific people who come around and show the guys some stretches . . . not everyone gets that.” Those who receive this benefit described the stretching instruction to be less than beneficial, as there are no corrections or modifications available for those who may already be affected by a previous injury.

Only seven of the individuals described increased pain and discomfort in the body on a typical day of work, but 11 indicated areas of the body where they typically experience pain. Participants indicated pain in their lower back (as noted by seven), shoulders (as noted by seven), hands/wrists (as noted by six), knees (as noted by four), neck and elbows (as noted by two), and forearms and feet (as noted by one).

To better understand the cause of the above-mentioned pain, participants were asked to describe the *most* physically taxing aspects of their job. The following insights were provided: overhead work (reported by three), repetitive motion of stepping in and out of the line truck (reported by three), lifting heavy equipment and climbing (reported by three), cutting and pulling wire (reported by three), and digging holes for and setting poles (reported by two). Although not listed as the most taxing aspects by line workers,

they also noted hot-stick work, driving for long periods of time, working in severe weather, and maneuvering within the constraints of the bucket as aspects of their work that increase pain in the body.

Seven individuals believe their pain interferes with their job performance, 10 believe their pain is a result of their job duties and responsibilities, seven have missed work due to an injury, and five state they are living with arthritis (shoulders, knees, toes).

Emerging physical health themes. When comparing qualitative data collected, some themes were clearly realized. Those interviewed reported overhead work, pain and difficulty maneuvering their hands and fingers in the work-approved gloves, and lower extremity pain from climbing and getting in and out of the bucket trucks most frequently.

Overhead work. Six of the participants noted shoulder pain due to overhead work. Injuries noted include basic pain; labral tear, requiring extensive physical therapy; and deteriorating shoulder cuff, requiring surgery.

Back pain. Seven of the nine participants noted troublesome back pain. Participants attribute this pain to driving long distances, pulling wire, and long periods of being on their feet.

Knee pain. Participants listed climbing and getting in and out of trucks frequently as the suspected cause for their knee pain. They described these tasks as monotonous, leading to lack of care or attentiveness. These repetitive actions not only resulted in general pain, but for some torn meniscuses, knee repairs, and even knee replacements.

Hand pain. The subject of hand and finger discomfort and pain was one that came up often. The main cause of this discomfort was described to be the heavy safety gloves that are required on the job. Participants noted these gloves make it difficult to hold, grab, and maneuver objects such as tools and wires. In addition to this strain, one participant noted the weather negatively affects the functionality of the hands: remember, line workers must wear their required safety gear in all seasons, whether it is August and 105 degrees Fahrenheit, or February and -3 degrees Fahrenheit. One line worker described “. . . the change from aching in the cold winter air. . . [to] swelling in the summer heat”.

Mental/emotional health themes. It seems there is little focus on the line workers' mental and emotional well-being. In fact, none of the participants were able to think of any supports in place through their workplace. However, they did note several stressors, such as dangerous job tasks. In fact, six of the 13 individuals interviewed stated that their mental stress level is higher on a typical workday than on a day when they are not working. So, what is contributing to these increased stress levels?

Safety. Six individuals mentioned safety as a major contribution to increased stress levels. One interviewee noted there is a task called switching that he needs to complete weekly, which he stated could be deadly if any steps were missed. Others mentioned “. . . [just] knowing high voltage exists” and the stress of “. . . working with live wires.” One participant stated, “The job is physical and emotional. . . it's dangerous. . . we have to always focus on being safe and making sure our crew gets home safe”.

Other individuals noted less physically harmful situations such as conflicts with co-workers, interacting within the union, and ensuring fellow staff members are safe.

Interpersonal communication and conflict. Two individuals discussed conflict amongst co-workers as a major element of stress. One individual stated the most mentally taxing aspect of the job was “. . . dealing with nonsense [and] stupidity from coworkers.” For some, this is a result of their position in the union, as some of these line workers also serve as Union Grievance Coordinator and Stewards. Within these roles, these individuals act as representatives for the employees, protecting their rights as per their contract with management.

The Proposed Plan

From the information gathered, eight sessions were created to begin to meet the needs of line workers (see Figure 1). These eight sessions are just a sample, but ideally sessions would be on an ongoing basis. It is important to note, too, that these sessions would act more as a guideline than a set script. In session, it is important for the DMT to remain flexible. Just because there is an evidence-based plan in tow, it may not always be appropriate to use. It is most important to be open to the needs of the participants and shift plans as needed.

To meet the physical, mental, and emotional needs of the participants, specifically those themes that emerged in the interview process, the following goals were incorporated into the proposed plan: group cohesion, team work, moving with intent, connectivity, mobility/flexibility, stability, exploring exertion and recuperation, grounding, use of breath, and coping skill building. The interventions were created with several frameworks in mind: the Bartenieff principles, specifically connectivity, breath support, grounding, intent, stability/mobility, exertion and recuperation (Hackney, 2015);

The Chacian circle which builds kinesthetic empathy; and the use of relaxation techniques through DMT, specifically progressive muscle relaxation (Levy, 1992).

Proposed Dance/Movement Therapy Intervention

#	Connections Utilized	D/MT Specific Intervention Idea	Structure	Goals
1	Head-tail, scapula-arm, thigh-pelvis, heel-coccyx, body half, diagonal	Forming rituals: Participants and clinician will decide on a way to begin and end session (a brief meditative tool or practice?) based on participant needs	Warm Up: Verbal Introduction Intervention: Gentle full body stretch/discussing needs from group Closing: 3-5 rounds of square breathing	Group cohesion, moving with intent, connectivity, mobility/flexibility, exploring recuperation, coping skill building
2	Head-tail, scapula-arm, thigh-pelvis, heel-coccyx, body half, diagonal	Building empathy through mirroring: Complete guided movement warm-up facing a co-worker	Warm Up: Intro to mirroring/mirror the leader Intervention: Using a similar gentle, full body stretch, complete movements mirroring a co-worker Closing: Recuperative sounds (participants all take a turn making their favorite recuperative sound/sigh, group mirrors it back)	Building kinesthetic empathy, team work, moving with intent, connectivity, mobility/flexibility, exploring relaxation/ recuperation techniques
3	Head-tail, scapula-arm, body half, diagonal	Exploring the use of space: Using specific job tasks as a framework, explore moving in near, mid, and far ranges	Warm Up: Use of kinesphere/ stretching and shrinking using breath Intervention: (Focusing on overhead work), participants with move head, neck, shoulders, arms, wrists, hand, back and torso through near, mid, and far space Closing: "Shake it out", going progressively through the body, shake out any tension	Exploring body in space, moving with intent, connectivity, mobility/flexibility, exploring recuperation, coping skill building
4	Head-tail, thigh-pelvis, heel-coccyx, body half, diagonal	Building strength for job tasks: Building strength in the lower-body to support climbing poles and in/out of truck	Warm Up: Moving through the space in different ways: walking, hopping, high knees, slowly, quickly Intervention: Circuit- squats, Frankenstein's, lunges, standing bicycles Closing: Slow lower-body stretches, being mindful of breath	Exploring exertion and recuperation, moving with intent, mobility/flexibility, stability, connectivity, use of breath
5	Head-tail, scapula-arm, thigh-pelvis, heel-coccyx, body half, diagonal	Stress release and tools for future management: Progressive muscle relaxation	Warm Up: Walking in your own shoes- a walking exploration to pinpoint current mood Intervention: Standing or sitting progressive muscle relaxation Closing: Brief grounding exercise- feet on the floor imaging you are growing roots into the floor as your spine lengthens	Emotional understanding and regulation, relaxation/recuperation, grounding, connectivity, coping skill building
6	Head-tail, scapula-arm, body half, diagonal	Building strength for job tasks: Building strength in the upper-body to support overhead work	Warm Up: Juggling scarves (comic relief) Intervention: Circuit- push-ups, dips, shoulder press, arm circles Closing: Slow upper-body stretches, being mindful of breath	Exploring exertion and recuperation, moving with intent, stability, mobility/flexibility, connectivity, use of breath
7	Whatever Is requested	Empathy and autonomy using the Chacian Circle: In a circle, each participant pinpoints an area of stress or tension, the group decided on a stretch or movement to ease area	Warm Up: Establishing the circle through passing a prop/props Intervention: Chace's circle: each participant pinpoints an area of tension or stress, group all mirrors a recuperative movement Closing: Use your breath to expand the circle- three deep breaths together, each bringing the group farther apart until the last breaks the circle	Group cohesion/team building, building kinesthetic empathy, moving with intent, connectivity, mobility/flexibility,
8	Head-tail, scapula-arm, thigh-pelvis, heel-coccyx, body half, diagonal	Building connection and team work: Team obstacle course	Warm Up: Creating spectrograms- participants will orient themselves in the space/amongst peers based on their answer to a question (birthday, place you were born, etc.) Intervention: In teams, participants will complete previously explored movements to race to the finish line Closing: Full body breathing	Group cohesion/team building, connectivity, stability, moving with intent, coping skill building

Figure 1. Proposed dance/movement therapy plan for line workers, in response to research gathered.

Discussion

This project included an in-depth look at dance/movement therapy, its observation and assessment tools, and the current application of DMT with populations similar to line workers. The application of DMT with labor-intensive occupations is not widely utilized, making it difficult to find up-to-date information. The expressed needs of the participants through interviews conducted suggested the need for improving efficiency, safety, and relief in the daily work routine of electric power-line workers.

Through studies reviewed, DMT and danced-based movement interventions have been shown to increase perceived personal physical and psychological well-being (Blázquez et al., 2010), balance and mobility (Krampe, 2013), flexibility and concentration (Bastug, 2018), self-esteem and social interactions, and to act as a positive coping mechanism (Quiroga, et al., 2010).

The proposed DMT interventions were created in response to the process of observing and analyzing some of the line workers' required taxing movements, such as climbing poles and doing overhead work. With the insights gathered utilizing a DMT lens, overused fundamental body connections were recognized and incorporated into the plan. Additionally, the first-hand testimony and themes (pain resulting from overhead work, back pain, knee pain, hand pain, safety concerns and interpersonal conflict) that emerged from the individual interviews are addressed through the above-mentioned interventions.

Limitations and Gaps

As mentioned previously, there is little to no information regarding clinical services being provided to this specific population, let alone any information about DMT

and its perceived benefits. This writer is hopeful that through the creation of this project, there will be some light shed on this group of individuals, and some attention to their needs will be explored.

In this capstone thesis, the movements observed were limited. In a larger study, it would be ideal for the researcher to have the opportunity to observe more movements in-person, as opposed to video. The researcher's closeness to the topic creates an unavoidable bias, which may be a limitation to the study.

Future Directions

With the information gathered and the proposed plan created, next steps include contacting management at National Grid and the Institutional Review Board (IRB) to discuss the possibility of continuing this study. Ideally, this would proceed sending a DMT on site to lead the proposed warm-ups to willing line workers. Before the first session and after the eighth session, clients will document their physical, mental, and emotional health. There will also be space for anecdotal data. Then, the two will be compared to evaluate if DMT is beneficial to National Grid linemen.

Additionally, although not directly connected, this process of research, observation, assessment, and interview could be applied to other occupations as a way to meet their specific needs. This process could support other workforces such as military personnel, mechanics, construction workers, and other labor-intensive professionals.

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References

- American Electric Power. (2010, October 6). *My Life as a Lineman* [Video file]. Retrieved from <https://www.youtube.com/watch?v=mQ9YmIQGyXk>
- Bastug, G. (2018). Examination of Body Composition, Flexibility, Balance, and Concentration Related to Dance Exercise. *Asian Journal of Education and Training, 4*(3), 210–215. Retrieved from <https://search-ebshost-com.ezproxyles.flo.org/login.aspx?direct=true&db=eric&AN=EJ1182097&site=eds-live&scope=site>
- Blázquez, A., Guillamó, E., & Javierre, C. (2010). Preliminary experience with dance movement therapy in patients with chronic fatigue syndrome. *The Arts in Psychotherapy, 37*(4), 285–292. <https://doi-org.ezproxyles.flo.org/10.1016/j.aip.2010.05.003>
- Blue Ridge Community and Technical College. (2017, April 10). Retrieved August 16, 2019, from <https://www.youtube.com/watch?v=3yFId43B0c8>
- Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Line Installers and Repairers. <https://www.bls.gov/ooh/installation-maintenance-and-repair/line-installers-and-repairers.htm>.
- Caldwell, C. (2013). Diversity Issues in Movement Observation and Assessment. *American Journal of Dance Therapy, 2*, 183. <https://doi-org.ezproxyles.flo.org/10.1007/s10465-013-9159-9>
- Chaiklin, S., & Wengrower, H. (2016). *The art and science of dance/movement therapy: life is dance*. New York: Routledge, Taylor & Francis Group.
- Dell, C. (1977). *A Primer for Movement Description Using Effort-Shape and*

Supplementary Concepts. New York, NY: Dance Notation Bureau Press.

Fischbach, A. (2017). Safety First: Linemen Learn Tips to Protect Their Crews: By sharing personal stories, videos and statistics, speakers drive home the importance of following rules and focusing on safety. *T&D World*, (12). Retrieved from <https://search-ebSCOhost-com.ezproxyles.flo.org/login.aspx?direct=true&db=edsggo&AN=edsgcl.519574149&site=eds-live&scope=site>

Hackney, P. (2015). *Making connections: total body integration through Bartenieff fundamentals*. London: Routledge.

Journal, T. P. (2013, February 28). Retrieved August 16, 2019, from <https://www.youtube.com/watch?v=MwdioU6S>

Kawano, T. (2018). Transmission of the professional identity through an embodied artistic ritual: An investigation of a dance/movement therapy welcoming ceremony. *The Arts in Psychotherapy*, 57, 1–10. <https://doi-org.ezproxyles.flo.org/10.1016/j.aip.2017.09.001>

Krampe, J. (2013). Exploring the Effects of Dance-Based Therapy on Balance and Mobility in Older Adults. *WESTERN JOURNAL OF NURSING RESEARCH*, 35(1), 39–56. <https://doi-org.ezproxyles.flo.org/10.1177/0193945911423266>

Laban Movement Analysis. (2020). Retrieved from <https://labaninstitute.org/about/lab-an-movement-analysis/>

L.A.N.A. (2020). Retrieved from <https://www.clt-lana.org/>

Levy, F. J. (1992). *Dance/movement therapy: a healing art*. Reston, VA: National Dance

Association, an association of the American Alliance for Health, Physical Education, Recreation, and Dance.

Pater, R. (2018). The Impact of Movement on Safety, Health & Longevity. *Professional Safety*, 63(5), 26–28.

Quiroga Murcia, C., Kreutz, G., Clift, S., & Bongard, S. (2010). Shall we dance? An exploration of the perceived benefits of dancing on well-being. *Arts & Health: International Journal for Research, Policy & Practice*, 2(2), 149–163. <https://doi-org.ezproxyles.flo.org/10.1080/17533010903488582>
<https://ezproxyles.flo.org/login?url=https://search-proquest-com.ezproxyles.flo.org/docview/2261150337?accountid=12060>

Sahl, J. D., Kelsh, M. A., Haines, K. D., Sands, F., & Kraus, J. (1997). Acute work injuries among electric utility linemen. *American Journal of Industrial Medicine*, 31(2), 223–232. doi: 10.1002/(sici)1097-0274(199702)31:2<223::aid-ajim12>3.0.co;2-3

Trostle, L. M. (2019). Rudolf Laban. *Salem Press Biographical Encyclopedia*.

Vinothini Padmanathan, Leonard Joseph, Baharudin Omar, & Roslizawati Nawawi. (2016). Prevalence of musculoskeletal disorders and related occupational causative factors among electricity linemen: A narrative review. *International Journal of Occupational Medicine and Environmental Health*, (5), 725. <https://doi-org.ezproxyles.flo.org/10.13075/ijomeh.1896.00659>

Welling, A. (2014). What is Dance/Movement Therapy? Retrieved from <https://adta.org/2014/11/08/what-is-dancemovement-therapy/>

Winters Fisher, A. F. (2019). Dance/movement therapy & warrior wellness: A pilot case

study. *The Arts in Psychotherapy*. <https://doi-org.ezproxyles.flo.org/10.1016/j.aip.2018.11.010>

Appendix

Basic Information:

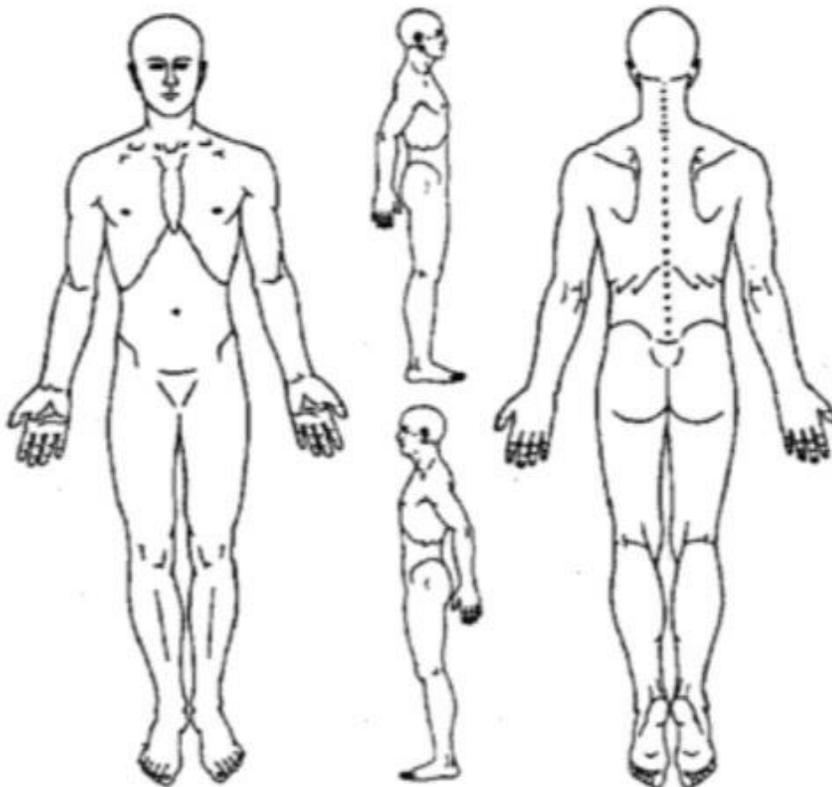
- Age? _____
- Gender? _____
- How long have you been a lineman? _____ years
- What is your specific job title? _____

Physical Health:

- How often/how long do you typically:
Stretch: _____ Exercise: _____ Meditate: _____
- What are the most physically taxing aspects of your job? Are there specific job tasks that increase pain in your body (i.e. climbing, overhead work, etc.)?

- Are there any other aspects of your job that increase pain and/or discomfort in the body?

- *Please use the attached diagram to indicate any areas of pain you typically experience in your body*



- Please circle your response to indicate your answer on a scale of 0 (least) to 10 (most):
Rate your body pain/discomfort on a typical day at work:

0 ---- 1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10

Rate your body pain/discomfort on a day where you are not at work:

0 ---- 1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10

- Does your pain interfere with your job performance? Yes No
- Do you believe any of the above-mentioned pain is a result of your job duties and responsibilities? Yes No
- If so, which areas of your body are most affected? _____

- Do you have arthritis? Yes No
 - If so, is it specific to one area of your body? Yes No
 - What area? _____
- Do you suffer from chronic pain (i.e. constant and/or reoccurring)? Yes No
- Have you ever missed work due to an injury? Yes No
- Do you currently, or have you previously seen any practitioners to manage pain (i.e. Physical Therapist, Occupational Therapist, Chiropractor, Acupuncturist, etc.)? _____

Mental/Emotional Health:

- Please circle your response to indicate your answer on a scale of 0 (least) to 10 (most):
Rate your mental stress level on a typical work day:

0 ---- 1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10

Rate your stress level on a day where you are not at work:

0 ---- 1 ---- 2 ---- 3 ---- 4 ---- 5 ---- 6 ---- 7 ---- 8 ---- 9 ---- 10

- Have you ever missed work due to a mental health issue? Yes No
- What is the most mentally taxing aspect of your job?

- What tools do you use to decrease stress?

- Is there any other information you would like to share relating to the current Capstone Thesis?

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: Jordan Donahue Rodrigues

Type of Project: Thesis

Title: A Specialized Dance/Movement Therapy Assessment and Proposed Plan for Addressing the Physical and Emotional Well-being of Line Workers

Date of Graduation: May 16, 2020

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

Thesis Advisor: Kelvin A. Ramirez, PhD., ATR-BC, LCAT