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Dance/Movement Therapy in Inpatient Hematological Cancer Treatment

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DANCE/MOVEMENT THERAPY IN INPATIENT HEMATOLOGICAL CANCER
TREATMENT

Megan Hall

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in partial fulfillment of the requirements for

Master of Arts

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Abstract

This quasi-experimental, mixed methods study examined the effects of dance/movement therapy on three types of outcomes (quality of life, anxiety and depression, and coping methods) for adult cancer inpatients who received treatment for a hematological cancer diagnosis. It was hypothesized that if hematological cancer patients participated in three or more dance/movement therapy sessions, then they would find a greater quality of life, decreased feelings of anxiety and depression, and an improvement in coping methods. Those patients who participated in three or more dance/movement therapy sessions while in the hospital formed the intervention group, and those who did not formed the control group. Each study participant completed pre and post tests for quantitative data analysis. The tools included the Functional Assessment of Cancer Therapy-General (Cella, Tulsky, Gray, Sarafian, Linn, Bonomi, Silberman, Yellen, Winnicour & Brannon, 1993), the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), and the Brief COPE Inventory (Carver, 1997). In addition to quantitative data, the principal investigator kept a researcher journal to track individual responses to dance/movement therapy interventions. The Chesler (1987) method of sequential analysis was used to analyze this qualitative data. Quantitative data analysis found that the control group saw greater improvements in all domains of quality of life (except physical well-being) and less anxiety and depression than the intervention group. Qualitative data analysis revealed themes regarding relaxation, anxiety, passivity, physical quality of life, and motivation for staying healthy were most frequent in the researcher journal. Quantitative data minimally supported the hypothesis, however qualitative data suggests that dance/movement therapy helped patients to relax, decrease their anxiety, motivate them to remain physically healthy, and to feel good.

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Chapter One: Introduction

I have long wondered what it means for a human to be healthy. I understand it most clearly through my grandmother's health history, full of resilience and a proactive mindset. She survived both colon cancer and breast cancer and, although her treatments occurred before my birth, I know her experiences as a cancer patient have shaped her view of health care. My grandmother's experiences and personal views influenced the development of my own ideas about health care.

When it came time for me to choose an internship site for my graduate program, I made a conscious effort to find a site where I could explore my interest with cancer care. I was directed to a stem cell transplant unit at a leading Midwestern medical center. During my internship I developed a personal method of working with a new medical population. The experience of working individually with cancer patients felt distinctively different from my preceding group work in an inpatient psychiatric setting. There seemed to be more of a focus for each intervention. My theory was that every movement was a prescription for a particular symptom. For example, I often worked with patients to help them find individual and creative ways of achieving relaxation and calmness during an unpredictable and restless time. The patients would also complain of pain or weakness in some parts of their bodies. I then introduced body-based methods of coping with pain and weakness and instructed them on how to accommodate for such symptoms but still maintain mobility. After approximately four months of gaining experience with this new population, I began to design a quasi-experiment for my master's thesis with the intention of figuring out how my interventions helped patients.

Integrative Medicine

The philosophy of integrative medicine goes beyond what conventional medical care,

alternative medicine, and complementary medicine provide for the patient. The term conventional cancer treatment is restricted to surgery, chemotherapy, immunotherapy, and radiation (Holland, 2000). All other treatments that intend to supplement conventional cancer treatment and/or address psychological adjustment are termed complementary therapies (Holland, 2000). Integrative medicine, coined by Dr. Andrew Weil, M.D., selects the best scientifically validated therapies from conventional, alternative, and complementary medicine to provide to patients with a primary medical illness (Lemley, 2011). The National Center for Complementary and Alternative Medicine (NCCAM) defined integrative medicine as the combination of “mainstream medical therapies and complementary and alternative medicine therapies for which there is some high-quality scientific evidence of safety and effectiveness” (Hardy, Stuber, & Hui, 2010, p. 278). A key principle of integrative medicine involves a strong collaboration between the patient and his or her physician such that the patient utilizes conventional, alternative, and complementary therapies appropriately. Integrative medicine recognizes that natural and less-invasive interventions should be used whenever possible to encourage the body’s innate means of healing itself but also these interventions should be scientifically studied. In summary, integrative medicine views health from a broad perspective by considering multiple factors that influence one’s health: mind, body, spirit, and community (Lemley, 2011).

This study took place under the supervision of the director of a Cancer Integrative Medicine Program. The hospital website (to remain un-named in order to protect the identity of participants) and marketing information indicated that this particular program attempts to heal the whole person in mind, body, and spirit following the belief that the mind/body connection is especially important in cancer care to promote healing and a sense of well-being. Services for

cancer patients and their family members include acupuncture, biofeedback, guided imagery, herbal counseling, counseling, massage therapy, medical hypnosis, nutritional counseling, and yoga. These complementary therapies are intended to enhance conventional medical cancer treatment by alleviating stress, tension, fatigue, nausea, pain, and anxiety that often accompanies conventional treatment.

More controlled research is needed to determine the efficacy of integrative medicine therapies by measuring outcomes related to whole person health, meaning the physical, mental, social, and spiritual aspects of an individual's health (Greeson, Rosenzweig, Halbert, Cantor, Keener & Brainard, 2008). As the integrative medicine philosophy continues to flourish within the conventional medical setting, dance/movement therapy can find its place as one of the many mind/body therapeutic approaches to promote whole person health, provided there is evidence that dance/movement therapy improves health related quality of life (Greeson et al., 2008).

Research Problem

A hematologic malignancy is a type of cancer originating in the blood or bone marrow, such as leukemia, lymphoma, or multiple myeloma (Altman & Sarg, 2000). Non-Hodgkin lymphoma and leukemia continue to be two of the leading sites of new cancer cases and deaths, with non-Hodgkin lymphoma being the sixth most common cancer diagnosed in both sexes and leukemia the ninth most commonly diagnosed in males (American Cancer Society, 2011). An estimated 4% of cancer deaths were from non-Hodgkin lymphoma (in both sexes) and leukemia accounted for 3% of female cancer deaths in 2010 (American Cancer Society, 2011). The incidence rates of blood cancers are very similar in 2009 and 2010 (Leukemia & Lymphoma Society, 2011). In 2010, the American Cancer Society estimated 74,000 new cases of lymphoma and 43,000 new cases of leukemia in the United States. An estimated 42,000 individuals died

from these diseases in the same year (American Cancer Society, 2011).

A cancer diagnosis is no longer a death sentence (Snyderman, 2007). More people are living with cancer and less dying from cancer by managing the disease daily as a chronic condition like heart disease or diabetes (Snyderman, 2007). Integrative medicine services and complementary therapies allow for cancer patients to live more comfortably (Greeson et al., 2008). Thus far, there have been no dance/movement therapy studies that focus exclusively on this type of cancer. Furthermore, it is rare to find a dance/movement therapist within an integrative medicine program or department. The therapeutic goals of complementary, alternative, and integrative medicine target many psychosocial aspects of living with cancer (Gregory & Gauthier, 2009). This study addressed three of these goals: decreasing depression and anxiety, improving quality of life, and promoting adaptive coping with illness.

Depression and anxiety. The most common types of psychological distress in cancer patients are depression and anxiety (Levinson, 1999). Some patients experience clinically significant symptoms (Levinson, 1999). One study by Hinton (1972) as cited in Nezu, Nezu, Friedman, Faddis & Houts (1998) found that as many as 58% of the cancer patients studied were depressed and 42% reported feeling anxious. Anxiety in cancer patients is most commonly a reaction to a diagnosis, pain, underlying medical condition, medication side effects, and related psychosocial problems (Nezu, et al., 1998). Throughout the course of disease and treatment, cancer researchers have observed “elevated rates of mood disturbance, distress, concern with physical symptoms, sexual, marital, and family problems, changes to one’s self image, and more negative attitudes toward themselves and their future” (Levinson, 1999, p. 2). High rates of anxiety and depression in the medically ill can have adverse consequences for their treatment outcomes, including poor adherence to medical regimens (Katon, Unutzer, & Simon, 2004).

Quality of life. There is no universal definition for quality of life. For this study, quality of life is operationalized as “what makes life worth living” (Whitehouse & Slevin, 1996, p. 201). Health related quality of life, which specifically pertains to those individuals living with a medical illness focuses on “the specific impacts that disease, injury, and their prevention and treatment have on the value of survival” (Lehman, 1999, p. 175). For cancer, the illness itself and the stressors that accompany it can significantly compromise quality of life (Nezu et al., 1998). Quality of life suffers, particularly during rigorous inpatient cancer treatment, because treatment is often more physically traumatizing than the disease itself (Holland, 2000; Nezu et al., 1998). Side effects from treatment can be debilitating and cause pain, weakness, fatigue, and nausea (Bone Marrow Foundation, 2001; Deshields & Nanna, 2010). Patients may find the control they have over their bodies decreases during treatment because the cancer is in control of their bodies. Patients must return to the hospital if they have a fever, infection, or other medical complication in response to treatment. The cancer inpatient treatment regimen often dictates when and what the patient must do on a daily basis. As an intern, it was not unusual for me to hear a patient say in an irritated tone, “It’s just been one thing after another.” In the case of many cancer diagnoses, hematological cancers included, the compromised quality of life during inpatient treatment is a trade-off for a prolonged life with the hope of a cure (Whitehouse & Slevin, 1996). In other words, patients seek painstaking treatment because they believe their life is worth living. Some patients have said to me, “I’ve got to do what I’ve got to do.”

Coping. Coping is something we do for the purpose of another outcome, such as alleviating anxiety and depression or improving quality of life (S. Hobfoll, 2010, personal communication). Aldwin (2007) defined coping as “the use of strategies for dealing with actual or anticipated problems and their attendant negative emotions” (p.125). She asserted that coping

in relationship to physical health involves adaptation to a medical illness via certain adaptive tasks: “maintaining an emotional equilibrium, maintaining a sense of self (including competence and mastery), maintaining good relations with family and friends and preparing for future exigencies” (p. 197). Researchers of the coping process Fawzy, Fawzy, Weisman, Worden, and Sobel recommended optimism, practicality, flexibility, and resourcefulness as key ingredients in the process of coping with cancer (as cited in Aldwin, 2007).

The Stem Cell Transplant Process

Prior to the implementation of the transplant, all patients are given a brochure of information published by The Bone Marrow Foundation (BMF) (BMF, 2001) that pertains to the type of transplant they will receive. Within the site that this study took place the majority of hematological cancer treatment protocols involved a hematopoietic stem cell transplant. A stem cell transplant is intended to cure hematologic malignancies by replacing diseased cells with new, healthy stem cells taken from a donor or the patient. “Stem cells give rise to all blood cells. Each one either divides to form a new stem cell or becomes a matured blood cell, white blood cell or platelet” (BMF, p. 3). There are two main types of stem cell transplants, autologous and allogeneic (BMF, 2001). In an autologous stem cell transplant, stem cells are taken from the patient and then frozen and stored for later transplantation into the patient’s blood stream (Weber, 2004). In an allogeneic transplant, a donor supplies the stem cells. The cells are usually then infused into the patient shortly after collection (Weber, 2004).

The first stage of inpatient treatment may include preparative conditioning, which destroys diseased bone marrow cells to make room for healthy transplant cells. This usually involves high-dose chemotherapy, and sometimes radiation (BMF, 2001). Once the diseased cells have been destroyed, transplant day (sometimes referred to as Day 0) arrives (BMF, 2001).

During a transplant the healthy stem cells are infused into the body, similar to a blood transfusion (BMF, 2001). The new stem cells travel through the blood stream, automatically find their way to the bone marrow, and develop properly and naturally within 10 to 14 days (K. Wells, personal communication, 2010). The new stem cells form new white blood cells, red blood cells, and platelets, and rehabilitate the immune system in a process called engraftment (BMF). Engraftment takes between two and four weeks, unless complications ensue (BMF). During these weeks, BMF recommends patients keep their minds and bodies busy to distract themselves from waiting for results. Visitations, journaling, exercise, socializing, and listening to meditation/relaxation tapes are good ways to keep busy. During an inpatient stay, several health care professionals come in and out of a patient's hospital room daily checking vital signs, performing routine blood work, distributing medication, and assistance with bathing (BMF). A transplant patient may be discharged when he or she is engrafted, meaning the blood cell count has reached a certain level (BMF).

Side effects of treatment. Cancer cells divide rapidly in the body, causing them to spread unless treated (Gregory & Gauthier, 2009). Chemotherapy kills rapidly dividing cells in the body, but this type of treatment cannot isolate its effects on cancer cells (Gregory & Gauthier, 2009). The cells of the gastro intestinal tract, hair, and skin also rapidly overturn; therefore common side effects of chemotherapy affect these systems (Gregory & Gauthier, 2009). Nausea, vomiting, diarrhea, loss of appetite, mouth sores, fatigue, hair loss, and skin rashes are common side effects of chemotherapy treatment (BMF, 2001). High-dose chemotherapy and radiation from preparative conditioning suppresses the immune system such that patients are highly sensitive to infection (BMF, 2001); masks, gloves, and sometimes gowns must be worn by hospital staff and visitors to prevent the spread of germs. Patients spend a lot of

time isolated to their hospital rooms but may walk about the unit wearing a mask and gloves.

Psychological factors. The Bone Marrow Foundation (BMF, 2001) advised transplant patients to take care of their minds as well as their bodies due to the impact the transplant process has on one's emotional well-being. BMF specifically cited certain factors affecting their psychological health: "interruptions in the tasks of living, unrealistic expectations about the speed or likelihood of a return to 'normal', or clinical conditions such as depression" (p. 10). According to some cancer survivors, fear of disease recurrence, fertility concerns, disruptions to work and family roles, and loss of energy contribute to anxiety. One's mental health can have direct effects on his or her physiological health. BMF stated, "A growing body of research indicates that such psychosocial factors play a significant role in recovery from [stem cell transplant] and long-term readaptation to life" (p.10). BMF recommended learning strategies to manage these psychosocial issues, such as joining a support group, using stress management techniques (relaxation techniques and meditation), learning how to manage treatment side effects, practicing good coping skills, counseling, and/or seeking support from others. "There is even some evidence that such 'interventions,' including yoga and guided imagery, may actually improve cancer survival" (p.10). Perhaps the most important things to do as a transplant patient, according to BMF, are to keep a positive attitude, stay focused on the goal of recovering, and be an active part of the treatment process by asking questions, staying informed, and tracking progress.

Theoretical Framework

This study put into practice medical dance/movement therapy, a growing subspecialty of dance/movement therapy. Goodill, the driving force behind this subspecialty stated

Dance/movement therapy is a mind/body approach to psychotherapy and increasingly

offered in the conventional medical arena as a psychosocial service....It is logical to surmise that if phenomena and changes in the physical body are a source of pain, distress, anger, or isolation, then a somatically oriented method of psychosocial support and intervention will have meaningful impact. (2006, p. 52)

The American Cancer Society (2011) has their own definition of dance/movement therapy within the context of cancer care, similar to Goodill's: "It focuses on the connection between the mind and body to promote health and healing" (para 1). Medical dance/movement therapy follows the integrative model of health care that treats that whole patient - mind, body, and spirit.

Dance/movement therapy theory and methodology. As a dance/movement therapist, I recognized that movement is both functional and expressive. I drew from the theories of Blanche Evan (Levy, 1988) and Bartenieff Fundamentals (Hackney, 1998) for integrating the functional and expressive aspects of movement into therapeutic movement interventions for cancer inpatients. From Blanche Evan, I incorporated The Evan system of functional technique, which is a system that rehabilitates and educates the body in an anatomically sound way. Functional technique includes postural work, coordination, placement of body parts, and rhythmicity. This style of work is individualized, that is, it varies, adapting to the individual's unique anatomical needs...Evan stressed the strengthening and alignment of the spine as the foundation of all action. (Levy, 1988, p. 39)

This technique is applicable to the cancer population because it takes into account the individual's physical limitations and needs. In addition, the Evan technique encourages safety through sound, anatomically informed movement interventions. In this study, participants often had physical limitations and physical safety concerns not only as a consequence of treatment side effects but also due to previous injuries and medical conditions. The goals of Evan's functional

technique that I included in my participants' movement goals were to give the body more strength, range of motion, new ways of moving in space, security, personal control over his or her body, body awareness, and efficient and meaningful movement expression (Levy, 1988). These new ways of moving give rise to new ways of reacting and adapting to a trying environment.

Like Evan's functional technique, Bartenieff Fundamentals educate the body to move efficiently in an anatomically and kinesiology sound manner (Hackney, 1998). Furthermore, functional, efficient movement underlies expressive capabilities such that as our bodies grow and develop new ways of moving, they are more capable of expressivity through body, effort, shape, and space (Hackney, 1998). I theorized that the cancer patients in this study rehabilitated their immune systems with conventional medical treatment and simultaneously rehabilitated their bodies by practicing Bartenieff Fundamentals in dance/movement therapy sessions. The Bartenieff Fundamentals helped them to move their recovering bodies more efficiently and integrated. More functionally efficient movement resulted in new ways of expressing themselves nonverbally about the experience of cancer treatment. I incorporated the six fundamental patterns of total body connectivity: breath, core-distal connectivity, head-tail connectivity, upper-lower connectivity, body-half connectivity, and cross-lateral connectivity (Hackney, 1998). The purpose of using Bartenieff Fundamentals with this population was to assist patients in learning about their bodies and their movement preferences, as well as how to move efficiently to cope with their environment. Stressing the connection between body parts, acknowledging body parts as separate but integrated, and teaching movement as relating to self and to others frequently came into play during my sessions, particularly as I introduced the fundamental patterns of total body connectivity to patients (Hackney, 1998). By the end of each warm-up with patients, we

gradually worked to integrate the entire body. Irmgard Bartenieff strived to activate and motivate her patients (Levy, 1988). I attempted to do the same with my patients to encourage their self-care and investment into their own health.

Because both the patients and staff members on-site were generally more familiar with mind/body interventions like relaxation, meditation, and self-massage, these techniques were also incorporated into my sessions. They were typically practiced at the beginning or end of a session to set the tone or alter a patient's state of mind and to build rapport with the patients as they gradually acclimated to participating in dance/movement therapy. I integrated my own creativity into relaxation and meditation exercises, as opposed to reciting a progressive muscle relaxation exercise from a script. I often attempted to tie in themes that arose in previous sessions as I verbally guided the patient through a relaxation exercise. For example, one patient was experiencing pain during a session, and she closed her eyes until the pain surpassed. I asked her what she saw when she closed her eyes, to which she replied "I think I saw water." I then guided her through a meditation in which she could manipulate how water moved throughout her body.

Research methodology. The mixed methods research methodology utilized in this study incorporated quasi-experimental aspects paired with phenomenological components. The quasi-experimental component was intended to provide quantitative data about the anticipated outcomes of dance/movement therapy treatment including coping skills, depression and anxiety, and functional assessment. The phenomenological aspect was included to better understand the subjective experiences of patients diagnosed with cancer during the treatment process.

Purpose of the Research Study

The purpose of this study was to understand if it would be beneficial for the practice of

dance/movement therapy to be integrated as a clinical service offered by an integrative medicine program. In order for dance/movement therapy to increase its presence in the medical settings and integrative medicine, the dance/movement therapy field needs more empirically based outcome research. It is time for dance/movement therapy to have a presence in medical settings and in helping people live and cope with cancer. My hope is that this study will trigger additional studies with diverse cancer diagnoses, and give rise to more dance/movement therapists working within psycho-oncology multidisciplinary teams to treat the whole patient - mind, body, and spirit.

Chapter Two: Literature Review

Introduction

Cancer is the second leading cause of death in the United States, accounting for approximately one quarter of deaths in the country (American Cancer Society, 2011). The American Cancer Society (ACS) estimated 1.4 million new cancer diagnoses for the year 2008 (ACS, 2008). The ACS also estimated the probability that half of men and one third of women are likely to develop some type of cancer throughout their lifetime. While these statistics are startling, the survival rates have significantly increased over the last 30 years, in part because of new knowledge acquired about cancer treatments, both in standard medical treatment practices and in the growing field of complementary therapies (ACS, 2008; Gregory & Gauthier, 2009). Within complementary therapies lies the possibility for dance/movement therapy to emerge in addressing the needs of the cancer patient. The purpose of this literature review is to focus on the role dance/movement therapy has played in improving the lives of adult patients with cancer.

Cancer involves physical as well as psychological distress. Research (Aldwin, 2007; Fawzy, Fawzy & Canada, 2000; Katon et al., 2004) has demonstrated that the physical distress impacts the psychological and vice versa. Until the 1970s, hospitals only treated the physiological impact of cancer on the body with traditional western medicine (Holland, 2000). Now, because of research endeavors, there are a variety of psychological support structures available to cancer patients, cancer survivors, and their families (Holland, 2000). The traditional western view of health is evolving to incorporate a holistic view of the person and to treat the cancer patient's mind, body, and spirit. However, research has also shown that such resources are underutilized (Sherman, Pennington, Latif, Farley, Arent & Simonton, 2007). The vast majority of adult oncology patients who attend dance/movement therapy services offered are female

breast cancer patients or survivors. Various interventions were regarded effective for those who did attend dance/movement therapy sessions, and participants profited from the groups in terms of improved quality of life and overall well-being (Dibbell-Hope, 2000; Lacour, 2006; Mannheim & Weis, 2006; Sandel et al., 2005).

General Information About Cancer

In order to understand the role of dance/movement therapy in cancer care one must have an idea of the physiological occurrences resulting from cancer growth and medical treatment. A cancer is a new and uncontrolled growth, or neoplasm, of abnormal cells that can invade and destroy other tissues in progressively advancing and aggressive stages (Petrone, 1997). There are many different types of cancer, each of them classified by their origin within the cells and tissues of the body (Petrone, 1997). Each type of cancer acts differently in the body in the way they spread and react to treatments (ACS, 2008). There are three basic subtypes of cancer: sarcoma, carcinoma, and leukemias and lymphomas (Gordon & Curtin, 2000). A sarcoma is classified by cancer cells that originate in connective and supporting tissue, such as bone, cartilage, nerves, and blood vessels (Gordon & Curtin, 2000; Petrone, 1997). Carcinomas invade cells that line the body's organs and result in breast, prostate, lung, or colon cancers, for example. Carcinomas may also cover the surface of organs as in skin cancer. At least 80% of cancers are carcinoma (ACS, 2009). The leukemias, lymphomas, and myelomas (also referred to as hematologic malignancies) rarely cause tumors but rather the cancer cells affect the blood forming cells in bone marrow and lymph nodes and may grow in other tissues (ACS, 2009; Levinson, 1999). Symptoms of this type of cancer may include lymph node enlargement and overproduction of immature white blood cells (Petrone, 1997). This type of cancer that affects the lymphatic system can seriously compromise the immune system because they are essentially

one in the same (Gregory & Gauthier, 2009).

Cancer progresses through four stages (Levinson, 1999). Each stage describes how far the cancer has spread in the body and informs treatment and prognosis (Gordon & Curtin, 2000). In the first stage, the cancer is small and localized in one area of the body. The most advanced stage is metastasis, in which the cancer cells grow and spread to other distant parts of the body through the blood and lymphatic system (Levinson, 2000). The new tumors formed by the growing cancer cells replace normal tissue and are usually inoperable (ACS, 2009; Gordon & Curtin, 2000).

Different types and stages of cancer yield different treatments, and consequently different physical and psychological responses to these treatments. The treatment for the cancer may be more vicious and challenging than the illness itself. For example, chemotherapy, a common drug treatment for cancer, is so strong that it kills both cancer cells and healthy growing cells (Gregory & Gauthier, 2009). The damage to healthy cells of the bone marrow, hair, skin, mouth, stomach and intestines may cause weakness, hair loss, mouth sores, nausea, and increased risk of infection (ACS, 2009). Anxiety and depression are common psychological reactions to chemotherapy (Holland, 2000). The treatments for hematologic malignancies- leukemia, lymphoma, and multiple myeloma involve high-dose chemotherapy as well as bone marrow transplants or stem cell transplants. Stem cell transplants often require the patient to be isolated for two to three weeks in order to reduce the risk of infection while their white blood cell counts are low (Bone Marrow Foundation, 2001). This isolation during a taxing yet vulnerable time for the cancer patient must challenge their ego strength. Dr. Jerome Groopman, an oncologist in Seattle, Washington, referred to the bone marrow transplant as “healing hell.” He said, “it is perhaps the worst treatment in modern medicine- and the best” (Holland, 2000, p.111).

Integrative Medicine

The most recent movement within complementary therapies of North America is integrative medicine, which is “healing-oriented medicine that takes account of the whole person (body, mind, and spirit), including all aspects of lifestyle. It emphasizes the therapeutic relationship and makes use of all appropriate therapies, both conventional and complementary” (Gregory & Gauthier, 2009, lecture notes). People seek out integrative medicine for a variety of reasons: to relieve pain, boost their immune system, control side effects of treatment, use less toxic or invasive treatment, increase quality of life, develop a sense of hopefulness, and generally to gain a more active role in their individual treatment process (Gregory & Gauthier, 2009). Out of integrative medicine grew integrative oncology, which specifically focuses on the lifestyle of persons with cancer. According to Sagar (2006) the aim of integrative oncology “should be one medicine synergistically combining therapies and services in a manner that exceeds collaborative effort of the individual practices” (p. 27). In other words, the whole combination of practices treating the whole patient is greater than the sum of its parts.

At the center of integrative medicine is evidence-based medicine. Evidence-based medicine includes forms of therapy that have empirical evidence to support their application in the clinical setting via randomized, controlled trials, systematic reviews, and meta-analyses (Hadley, Davis & Khan, 2007). Evidence-based medicine follows a five-step model: “formulation of answerable clinical questions; searching for evidence; critical appraisal; applicability of evidence; evaluation of performance” (Akobeng, 2005, p. 837). Most health care institutions and professionals are required to practice evidence-based medicine. The argument for practicing evidence-based medicine exclusively is that “it allows the best evaluated methods of health care (and useless or harmful methods) to be identified and enables patients and doctors

to make better informed decisions” (Kerridge, Lowe & Henry, 1998, p. 1151). If

dance/movement therapy is to become a part of the integrative oncology movement, then the field must have empirically sound evidence to support its application in integrative medicine practice.

Psycho-oncology

Over the course of the last three decades, the medical field has increased their concern for the psychological dimension of cancer illness and incorporated psychological support into patient care, thus instigating the field of psycho-oncology (Holland, 2000). Psychological issues related to a cancer diagnosis include decreased body image, anger, anxiety, depression, and others (Holland, 2000). It is the job of the psycho-oncology, or psychosocial oncology professional to help the cancer patient find his or her best way of coping with the distress caused by illness and treatment, and to improve the patient’s quality of life (Holland, 2000). The patient may be referred to individual or group counseling in a variety of modalities from cognitive-behavioral therapy to creative arts therapies (Holland, 2000). According to Manheim and Weis (2006), “the main focus in psycho-oncology rehabilitation is generally the promotion of resources and remaining health. Promoting self responsibility and self control, and reduction of anxiety and depression are important therapeutic goals” (p. 70). After the creation of psycho-oncology came an increasing interest in complementary therapies for cancer treatment.

Complementary Therapies

The term “conventional cancer treatment” is restricted to surgery, chemotherapy, immunotherapy, and radiation (Holland, 2000). All other treatments that intend to supplement conventional cancer treatment and/or address psychological adjustment are termed complementary therapies (Holland, 2000). Some examples include diet, exercise, spiritual

guidance, psychotherapy or counseling, therapeutic touch, acupuncture, massage, aromatherapy, energy healing, and mind/body methods (Holland, 2000). Cancer survivors have taken advantage of complementary therapies in cancer care to feel more in control and to possess more resources to fight cancer with strength, immunity, calmness, and confidence (Holland, 2000). Cotter (1999), as cited in Sandel et al. (2005):

proposed that dance may help the healing process as a person gains a sense of control through (a) spiritual components of dance; (b) mastery of movement; (c) escape from stress and pain by a change in emotion, states of consciousness, and/or physical capability; and (d) confronting stressors. (p. 302)

The National Center for Complementary and Alternative Medicine (NCCAM), a division of the National Institute for Health has steadily increased their budget over the last 15 years because the organization found that individuals were inquiring about new methods for treating their illnesses outside of traditional western methods and even spending money out of pocket on complementary and alternative therapies (Gregory & Gauthier, 2009).

Mind/body interventions. With the development of complementary and alternative treatments for cancer came mind/body interventions. The NCCAM defined mind/body medicine as “a variety of techniques designed to enhance the mind’s capacity to affect bodily function and symptoms” (Carlson & Butz, 2008, p.127). These techniques have been identified throughout the literature as hypnosis, guided imagery, deep breathing, relaxation, meditation, yoga, tai chi, and qi-gong. Such mind/body interventions are different from the clinical practice of dance/movement therapy. Goodill (2005) clarified the distinction between mind/body interventions and medical dance/movement therapy. Typically in mind/body interventions the practitioner leads the passive patient in a sequence or routine. A dance/movement therapist

follows the patient in an interactive and improvisational manner (Goodill, 2005). Important themes emerge in this expressive and creative process that puts the patient in a more active role than a mind/body discipline. Furthermore, in dance/movement therapy, a relationship between the therapist and the patient is key in determining future individualized and creative interventions; dance/movement therapy is less formulaic than mind/body interventions and, as Goodill (2005) stated, improvisational.

Holland (2000) recommended mind/body interventions, specifically meditation and relaxation exercises, to cope with the anxiety and depression elicited by chemotherapy. She also claimed mind/body techniques would help the patient to reclaim self-control when they feel as if the cancer has taken control of their lives. Holland also described mind/body methods as self-generated; in other words the patient can memorize the interventions taught to them by the mind/body practitioner and use them at any time to assist with symptoms like nausea, pain, or anxiety. Based upon my ten months of working with cancer inpatients as a dance/movement therapy intern, I theorized that dance/movement therapists can teach cancer patients interventions and/or work with patient to creatively invent individualized interventions catered to the patients' needs in order to help patients cope with uncomfortable symptoms and side effects.

The Lebed method. Breast cancer patients have clear physical and psychological needs after receiving lumpectomy and mastectomy surgery that therapeutic dance and movement can address. Sherry Lebed, professional dancer and creator of The Lebed Method, co-authored a clinical case report with two physical therapists at the Breast Cancer Rehabilitation Program of Albert Einstein Medical Center. Their outpatient group program combined ballet and jazz movements to promote good posture, balance, control, and isolated movement in the shoulders and trunk. Molinaro, Kleinfeld, & Lebed (1986) claimed, "The needs of patients with breast

cancer surgery to feel ‘whole again, to be comfortable with a changed body image, and to remain a functional part of society’ are all important” (p. 967). Whereas physical therapy for mastectomy patients at Albert Einstein Medical center exercised limited parts of the body in a mechanical fashion, the Lebed Method was designed to treat the body as a whole using dance to benefit the patient both physically and psychologically. Program participants discovered an improvement in their shoulder range of motion and functional ability as well as self-confidence and self-esteem. The participants directly linked the act of dancing to their psychological results. In addition to individual improvement in physical and psychological dimensions, program participants demonstrated camaraderie during their shared experience in the program, which is consistent with many other group therapy structures cited in this literature review (Goodill, 2005; Holland, 2000; Jonesco, 2009; Petrone, 1997; Sherman et al., 2007). It is important to differentiate therapeutic dance and movement and dance/movement therapy when considering the implications of the Molinaro et al. (1986) study. Lebed worked with a team of physical therapists to design a dance program for breast cancer patients. The physical outcomes were of primary concern to the researchers, not the psychosocial outcomes that are important to dance/movement therapy goals and objectives.

Another dance and movement program in the literature utilized the Lebed Method for physical rehabilitation from breast cancer surgery. Susan Sandel, a dance/movement therapist, co-piloted a controlled research study on a dance and movement program designed to improve quality of life and shoulder function in 35 breast cancer survivors surgically treated five years prior to the study. Sandel facilitated the 12-week program using The Lebed Method, which “combines structured exercises with dance movements to upbeat, multicultural music that are designed to promote a flow of energy through the body” (Sandel, 2005, p. 302). The movements

focused on positive expression, recovery, and celebration for the purpose of subtly addressing issues of concern for breast cancer treatment survivors: body image, sexuality, sense of control, grief, and loss, to name a few (Sandel et al., 2005). Participants completed quantitative pre and post tests to measure their breast cancer-related quality of life, shoulder range of motion, and body image, using Functional Assessment of Cancer Therapy-Breast Questionnaire (FACT-B), arm circumference, and Body Image Scale, respectively. All three measured improved significantly over the course of the dance and movement program. Although the movement classes were led by a dance/movement therapist Sandel did not attempt to conduct this program as a typical dance/movement therapy program. There was little to no structured verbal processing of thoughts and feelings to link the movement experiences of the group to the recovery process.

Dance/Movement Therapy with Cancer Patients

Whereas mind/body interventions are established exercises that the participant can follow from the practitioner's lead, dance/movement therapy demands more activity from the cancer patient in an active, creative, and improvisational manner (Goodill, 2005). Instead of following a predetermined mind/body exercise, dance/movement therapy can help cancer patients to find their own ways of coping with illness that are catered to their individual needs. Goodill (2005) described a variety of interventions utilized by dance/movement therapists in the oncology setting. One example is an intervention designed by Dieterich (1990) in which participants embody the action of immune cells attacking cancer cells using pillows, soft bats, vocalizations, and group interaction (as cited in Goodill, 2005). "Dieterich reports that the women experienced this activity as cathartic and liberating" (as cited in Goodill, 2005, p.129). Goodill (2005) developed her own intervention for the cancer population known as the "journey exercise" (p. 130). In this exercise the mover nonverbally demonstrates his or her journey through cancer by

starting at one point in space, naming this starting point in terms of the personal journey, and moving to an end point in the room symbolizing the end point of the journey. Movement between these two points is metaphorical for the life of a cancer patient. Goodill (2005) provided examples of patients' journey through cancer: "I took two steps forward and one step back...I had no idea where I was going...I was going around in circles...I got stuck in that problem and couldn't get out of it...I fell down and picked myself back up again" (p. 131). This journey exercise was also replicated in theses authored by two of Goodill's students cited in this thesis, Petrone (1997) and Levinson (1999).

Lacour (2006) completed a study in Argentina of dance/movement therapy with adult cancer patients in two different phases of their illness. For the first phase of illness (during medical treatment) Lacour hypothesized dance/movement therapy groups would enhance quality of life, adherence to treatment, and immune system function. In the dance/movement therapy intervention group, participants explored stress reduction/relaxation techniques, self-empowerment, existential issues, emotion expression, resilience, and reframing the illness. The author did not provide data analysis methodology but claimed that all participants reported moderate improvement in quality of life parameters, explicitly increased vigor, self-efficacy, nutrition, well-being and decreased fatigue and psychological distress. For the second phase of illness (after treatment and in remission), Lacour hypothesized the addition of Tango to the dance/movement therapy group would benefit patients (particularly post-mastectomy breast cancer patients) in social recovery "and the readdressing of couple" (p. 186). After the incorporation of tango dancing into the group structure during the second phase of illness, participants evaluated the dance/movement therapy workshops either moderately or extremely helpful. A written testimony by a 42-year-old mastectomy patient said learning tango "helped me

connect with the external world” (p. 189). Lacour’s study is a weak design, mainly because without a control group or a pre test, she could not determine if the quality of life outcomes were due to dance/movement therapy interventions. The written testimonials from participants were the strongest pieces of evidence for the dance/movement therapy group’s efficacy.

Mannheim and Weis (2006) conducted a study in Germany on dance/movement therapy within a psycho-oncology rehabilitation facility. According to the authors, psycho-oncology in Germany has begun to include dance/movement therapy to offer a nonverbal physical and emotional experience of coming to terms with cancer disease. Using a non-controlled experimental design, their study aimed to describe how group dance/movement therapy affected cancer inpatients in terms of quality of life and self-esteem. Seventy-seven female cancer patients (51 of which had breast cancer) completed a Quality of Life Questionnaire, the Hospital Anxiety and Depression Scale, and the Frankfurt Self-Image Concept scales before and after completion of dance therapy. Statistical analysis of the data comparing the pre and post intervention scores produced a significant difference in the quality of life scores and the anxiety and depression scores, but not the self-image measure. Participants also wrote responses to the question “What did you personally gain from dance therapy?” (Mannheim & Weis, 2006, p. 64). Using content analysis, the authors divided the responses into 11 different categories with expression of emotion being the most prominent theme. Because this study was not controlled, the researchers could not determine that dance/movement therapy independently caused an improvement in quality of life measures or a decrease in anxiety and depression measures. An interesting fact to note about oncology research in Germany is that a vast majority of research on malignancies comes from France and Germany because 90% of cancer patients participate in clinical trials, whereas in the United States, only 3% of cancer patients participate in clinical

trials (Gregory & Gauthier, 2009). It seems that both the medical field and dance/movement therapy field in the U.S. are behind Europe with respect to oncology research.

Dance/Movement Therapy with Breast Cancer Patients

The majority of research done on dance and movement or dance/movement therapy with cancer patients has specifically targeted breast cancer patients or survivors (Dibbell-Hope, 2000; Jonesco, 2009; Levinson, 1999; Moskow, 1996; Petrone, 1997; Sandel, 2005; Serlin, 1996; Waltzer, 1989). One reason for the popularity of this specific population is that breast cancer is the most frequently diagnosed cancer in women, accounting for approximately one quarter of female cancer cases in 2008 (American Cancer Society, 2008). Rowland and Holland in 1989 claimed, “Breast cancer is the most widely studied cancer with respect to its psychological impact” (as cited in Levinson, 1999, p. 12). According to Sandel et al. (2005), healthcare providers and public policymakers recognized the need to refocus research on the quality of life for breast cancer survivors after their treatment. Furthermore, breasts are organs that connect women both physiologically and psychologically to their sexuality and femininity. A threat to this organ means a threat to a woman’s sexual identity.

Sandy Dibbell-Hope, a dance/movement therapist, explicitly studied dance/movement therapy with breast cancer patients. Using an experimental design, Dibbell-Hope (2000) studied the role of dance/movement therapy in women’s psychological adaptation to breast cancer after medical treatment. Dibbell-Hope utilized a specific technique in dance/movement therapy known as Authentic Movement for the studied group of 33 women. Dibbell-Hope rationalized that Authentic Movement would encourage trust in oneself and strength to become an active participant in the healing process from breast cancer. She hypothesized that breast cancer patients who participated in a 6-week Authentic Movement group would show improvement in

mood, distress, body-image, and self-esteem.

Dibbell-Hope found discrepancies between her collected quantitative and qualitative data. Research participants completed pre and post tests via three questionnaires that assessed mood, psychological distress, or body image and self-esteem. Quantitative analysis of these pre and post test measures found minimal mean score differences in mood, distress, and body image/self-esteem, suggesting that dance/movement therapy treatment had little to no impact on these scores. However, in post-treatment interviews 59% of participants reported positive feelings regarding mood and self-esteem after experiencing group Authentic Movement, and 27% reported feeling an appreciation of their bodies. The participants of the study perceived an improvement in their psychological adaptation to breast cancer, but the numbers did not agree. Interestingly, quantitative analysis did yield significant mean differences in vigor, fatigue, and somatization pre and post treatment. The author stated that a change in these bodily symptoms proposes “Authentic Movement may contribute to a sense of physical well-being” (Dibbell-Hope, 2000, p. 59), which parallels the findings of those studies that utilized The Lebed Method in their intervention groups (Molinaro et al., 1986; Sandel et al., 2005) as well as studies that involved different cancer diagnoses (Lacour, 2006; Mannheim & Weis, 2006).

Conclusion

In 1985 Blaney (as cited in Goodill, 2005) said, “there is clearly room for new psychological applications in dealing with the emotional and physical stress of distress of cancer...although it remains to be shown what patients are benefited by what interventions and why?” (p.125). The research reviewed suggests that a variety of movement-based interventions can benefit the cancer patient. These interventions were identified as tango, expressive movement, the Lebed Method, jazz and ballet, symbolic movement (i.e. Goodill’s journey

exercise), improvisational dance, and Authentic Movement, almost all of which intended to improve quality of life for the cancer patient. However, some of these interventions, such as The Lebed Method, jazz, and ballet were facilitated as therapeutic dance or movement and not dance/movement therapy. More research on dance/movement therapy with cancer patients will help distinguish therapeutic dance/movement from dance/movement therapy. A question remains: what specific psychological needs of the cancer patient do dance/movement therapy interventions address? In other words, does dance/movement therapy do what it intends to do for the cancer patient? There is anecdotal and qualitative information in the research to answer this question but very little quantitative data to support the subjective accounts of the cancer patients and therapists. Knowing what dance/movement therapy can do for the cancer patient may increase the likelihood that cancer patients will take advantage of such resources and seek psychological support in addition to their conventional cancer treatments.

The research linking dance/movement therapy with adult oncology targets either the general cancer population or the breast cancer population. Even in those studies that included a mixture of cancer diagnoses, breast cancer was the dominant diagnosis (Lacour, 2006; Mannheim & Weis, 2006). There are clear arguments amongst the widespread field of health care for focusing complementary therapies on meeting the needs of breast cancer survivors after life-altering treatments. It is intriguing that breast cancer is the only specific type of cancer extensively studied by dance/movement therapists when other types of cancer treatments can be equally if not more distressing, such as bone marrow transplants and osteosarcoma amputations (Holland, 2000). Patients who undergo these treatments face significant psychological adjustment and body-image distortions that dance/movement therapy can address. Furthermore, the literature revealed that dance/movement therapy improved physical well-being in multiple

studies (Dibbell-Hope, 2000; Lacour, 2006; Mannheim & Weis, 2006; Molinaro et al., 1986; Sandel et al., 2005). It is not explicitly stated in the literature, but physical well-being may play a part in decreasing stress. Research has also exposed the harmful effects of stress on the immune system (Lacour, 2006). A healthy immune system is imperative for defense against cancer, particularly for defense against the lymphomas. However, no dance/movement therapy researcher has focused on this cancer subtype. With multiple studies to support the role of dance/movement therapy in breast cancer treatment, it is time to investigate which dance/movement therapy interventions can meet the needs of cancer patients who face other aggressive, life-altering medical treatments.

Research Hypothesis

Based on the literature reviewed and the experiences of the principle investigator as an intern with hematological cancer patients, this study hypothesized that if hematological cancer patients participated in three or more dance/movement therapy sessions, then they would find a greater quality of life, decreased feelings of anxiety and depression, and an improvement in coping methods. Because coping is typically a mediator or moderator for other outcomes (S. Hobfoll, personal communication, 2010), the principal investigator focused her dance/movement therapy methods on improving the body-based coping skills of intervention group members so that their quality of life and anxiety and depression measures would improve. The three dependent variables measured in the hypothesis were chosen based on the foci of previous dance/movement therapy and oncology literature as well as the concerns presented by staff and patients' family members in the medical center of which this study took place.

Quality of life. Psycho-oncology services are offered in modern cancer treatments to improve patients' quality of life (Mannheim & Weis, 2006). "It is possible to view the potential

impact of DMT from a quality of life standpoint, especially for the medically ill. DMT often focuses on goals such as the enhancement of emotional well-being, meaningfulness, optimism, goal-setting, the sense of control, self-perceptions and social functioning” (Goodill, 2005, pp. 24-25). Mannheim & Weis’s study on dance/movement therapy with cancer inpatients in Germany suggest a significant improvement in quality of life during the intervention period, specifically emotional, fatigue and physical functioning. Lacour (2006) found support for the hypothesis that dance/movement therapy would enhance the quality of life of 15 adult oncology patients. The quality of life parameters most improved were vigor, fatigue, self-efficacy, social support, and nutrition. This study intended to replicate these findings using a cancer-specific measure for quality of life.

Depression and anxiety. Treatment programs developed in the United States and Europe for women rehabilitating from breast cancer have included dance, music, art or drama therapies under the claim that the creative arts therapies increase patients’ awareness and self esteem. One of the objectives to this goal is decreasing patients’ negative mood such as depression and anxiety (Dibbell-Hope, 2000). Dance/movement therapy participants in Dibbell-Hope’s study reported feeling less depressed and anxious after completing a six-week Authentic Movement group for women with breast cancer. Mannheim and Weis (2006) used the Hospital Anxiety and Depression Scale to measure depression and anxiety in female cancer inpatients. During the intervention period, dance/movement therapy group participants’ mean values of anxiety and depression significantly decreased to more normal levels (according to the authors of the anxiety and depression measure).

Coping. Research on coping suggests that learning new ways of coping is helpful for cancer patients in a variety of ways. For example, Nezu and colleagues (1998) say, “Learning

new ways to cope would help to prevent emotions from interfering with rational decision making regarding treatment and planning for the near and distant future” (p. 19). For the hematological cancer patients in this study, dance/movement therapy was a completely new experience for them and would inevitably introduce them to new ways of coping by accessing new resources. In the study by Mannheim & Weis (2006), “qualitative assessments clearly show that Dance Therapy has a positive influence on the coping process” (p. 61) both physically and emotionally.

Chapter Three: Methods

Methodology

All complementary therapies provided to oncology patients at the study site have empirical research to support their usage in the medical setting (Gregory & Gauthier, 2009). It was therefore appropriate for a dance/movement therapy research project to follow suit and employ quantitative methods in a quasi-experimental study. Dance/movement therapy research is lacking in empirical support. In order for medical dance/movement therapy to reach more oncology patients in medical settings, controlled quasi-experimental designs must be used to evaluate its effectiveness (Mannheim & Weis, 2006). With this in mind, the principal investigator designed a mixed methods study using quasi-experimental and phenomenological methodologies. The quasi-experimental aspects involved pre and post test measures of quantitative survey data. Phenomenological aspects involved collecting qualitative data about the participants' subjective experience of dance/movement therapy interventions. This model allowed for the needs of the field to be met by providing quantitative evidence based data while also answering the more pertinent questions revealed by the phenomenological component.

Participants

Fourteen hematological cancer inpatients gave their consent to participate in the study, however only eight of these participants fully completed pre and post test data for quantitative analysis. All 14 participants fully completed the pre test but six of these participants either did not complete the post test before leaving the hospital or they partially completed the post test. The age range for all participants was between 22 and 67 years. These patients resided in the hospital between 8 and 60 days to receive treatment for a blood cancer diagnosis. Such treatment included chemotherapy, radiation, and/or a stem cell transplant.

Intervention group. Three participants completed pre and post test measures in the intervention group. The intervention group included one Caucasian female aged 22 years, one Caucasian male of 65 years, and one Hispanic male aged 59 years.

Control group. Five individuals completed both pre and post test measures in the Control group. This group was comprised of two females (one Caucasian, one African-American), and three males (two Caucasian, one Hispanic). Their ages ranged from approximately 40 to 60 years of age.

Consent Process

Participants were selected from a census list of patients admitted to the Bone Marrow Transplant Unit. Before the patient was approached for participation, he or she met five criterion: (1) the patient has a diagnosis of some type of hematologic malignancy; (2) The patient has legal guardianship of him or herself; (3) The patient can complete three surveys; (4) The patient can make an informed decision about whether to participate in research; (5) The patient is not too ill to participate in research. The principal investigator reviewed the census with either the unit director or the clinical nurse coordinator to identify which patients met criteria and to obtain medical clearance to approach a patient who qualified for the study. With permission, the principal investigator approached prospective participants individually in their hospital rooms and described the study using a script (see Appendix B). Based upon the patient's response, the principal investigator either told the patient that her movement therapy services were still available to the patient three times per week regardless of the patient's research participation status, or the patient engaged with the principal investigator in the process of informed consent using a script (see Appendix C). The research site's Institutional Review Board provided a template for the consent form used. Attached to the consent form was a legal document, the

HIPAA Authorization to Share Personal Health Information in Research (see Appendix D). This document informed patients that the principal investigator had access to their medical records for the purpose of research. When patients agreed to participate in the study and had all questions answered to their satisfaction, they then signed consent forms. Each participant was provided a copy of the signed consent form.

Intervention

All participants enrolled in the study were offered individual dance/movement therapy sessions three times per week (Monday, Tuesday, and Wednesday). Those participants who engaged in three or more dance/movement therapy sessions formed the intervention group. Those who declined to participate in dance/movement therapy or participated in less than three sessions formed the control group. Patients often asked the principal investigator what dance/movement therapy entails. The principal investigator described dance/movement therapy to patients as relaxation and breathing techniques, gentle stretching, body awareness, and mind/body integration. The overall purpose of dance/movement therapy sessions in this setting was to introduce body-based coping skills to relieve symptoms of depression and anxiety and improve quality of life domains.

All sessions began with a full body warm-up, moving different parts of the body from head to toe, or vice versa. The Evan functional technique used as part of the dance/movement therapy theoretical framework in this study utilizes a warm-up to release excess tension in the body (Levy, 1988). The warm-up also served as an assessment process for the therapist to determine the patient's motivation, anxiety level, psychosocial stressors, physical capabilities, and mindfulness. The therapist also began to ask the patient questions and build rapport in this process. All verbal and nonverbal exchanges inspired future interventions. For example, if a

client appeared anxious and reported symptoms of anxiety, the therapist then introduced relaxation and breathing techniques like body-based meditation, positive imagery, self-massage, tension-release exercises, three-dimensional breathing, and coordinating movement with breath. In teaching a patient how to relax the mind and body, the dance/movement therapist introduced new ways of coping with the trying side effects of inpatient cancer treatment (Hackney, 1998). Rhythm, whether it came from recorded musical accompaniment or creating rhythms with the body were used to invigorate and enliven the body; the intention of using rhythm was to counteract idleness, apathy, and boredom that contributes to depression. Rhythm is an organizing tool for thoughts and feelings, putting them into action through the body (Levy, 1988). Rhythm comes into play in the Evan technique within her fundamental concept of mobilization. In mobilization movement directives increase body awareness and broaden movement vocabulary by exploring the elements of dance: rhythm, space, body movement, and content (Levy, 1988). Sessions frequently ended with a verbal processing of the movement experience. The dance/movement therapy intern prompted patients to describe their experience of moving, how they felt while moving, and how the intervention was helpful if it was so.

Procedure

This study took place for nine weeks at the medical center from September to November, 2010. This study was designed to be as empirically sound as possible, yet is also naturalistic in the sense that the control and intervention groups were naturally formed based on the patient's decision whether or not to participate in dance/movement therapy. Those who participated in three or more dance/movement therapy sessions with the principal investigator formed the intervention group, and those who participated in two or less sessions automatically formed the control group. The number of sessions required for intervention group status was determined

based on the principle investigator's prior experience in the study setting. While working with stem cell transplant patients during their treatment, I was able to facilitate an average of three sessions within a two to four week time span. Three sessions seemed to be the most realistic number to achieve during the average inpatient stay and to have an impact on the patient's psychological adjustment as evidenced by previous encounters with patients prior to the implementation of this study.

The principal investigator collected both quantitative and qualitative data from the intervention and control groups. Quantitative data was collected in the form of survey scores from three different survey measures (Functional Assessment of Cancer Therapy- General (Cella et al., 1993), Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), and the Brief COPE (Carver, 1997)). All participants completed both a pre test and a post test composed of these three surveys. The surveys are self-administered, self-report measures. The end of the post test included one qualitative question: "What new coping methods have you used during your most recent stay in the hospital?" The purpose of adding this question was to supplement the purpose of the Brief COPE, which may not include coping mechanisms that the participant utilized while in the hospital. It was hoped that patients in the intervention group would list body-based coping skills learned in dance/movement therapy in response to this final question.

The remaining qualitative data was collected from the principal investigator's point of view in the form of a researcher journal. Each journal included a summary of an individual dance/movement therapy session and how the patient responded to the interventions of that session. The purpose of adding the qualitative researcher journal was to strengthen the research design and to examine congruencies or disparities between participant-reported quantitative data and researcher-reported qualitative data.

All paper copies of data—consent forms, pre tests, and post tests—were key coded with a six-digit numeric code followed by a “C” if the participant belonged to the control group or an “I” if the participant belonged to the intervention group. These paper copies were stored in a locked file cabinet on-site. Numerical data (scores from pre and post test measures) were entered into a password-protected Excel file upon collection. Data for the researcher journal was entered into a password-protected Microsoft Word file.

Tools. The three surveys utilized in this study served to obtain measures for the three types of factors of the hypothesis: quality of life, anxiety and depression, and coping methods. Pre test and post test measures of these surveys were collected from all participants to calculate the change in scores from the beginning and end of inpatient treatment. The principal investigator collected all completed pre and post tests and stored hard copies in a locked file cabinet. Once a participant completed each survey, the principal investigator entered the quantitative data in a password-protected Excel file. In addition to relevance to the hypothesis, these tools were chosen because of their brevity and simplicity, thus minimizing the burden on physically ill patients. In total, participants completed 69 survey questions for approximately 30 minutes; each survey took between five and ten minutes to complete.

Functional assessment of cancer therapy-general. The first tool administered as part of pre and post test measures was the Functional Assessment of Cancer Therapy-General version 4, or FACT-G (Cella et al., 1993). The FACT-G is a 27-item instrument developed to measure general health-related quality of life in cancer patients. It measures the general domains of health-related quality of life in four subscales: physical well-being, emotional well-being, social/family well-being, and functional well-being. There are several different versions of the FACT designed for specific types of cancer, but the General version was used in this study to be

used for patients with all types of blood cancers. Sandel and colleagues (2005) used the Functional Assessment of Cancer Therapy-Breast Questionnaire (FACT-B), a version developed from the FACT-G, for the purpose of measuring quality of life in a sample of women with breast cancer who participated in a dance and movement treatment program. A copy of the FACT-G, version 4 can be found in Appendix E.

Hospital anxiety and depression scale. The second pre test measure completed by participants was the Hospital Anxiety and Depression Scale (HADS) developed by Zigmond and Snaith (1983). The HADS is a questionnaire commonly used by physicians, psychiatrists, and clinical psychologists in a general medical setting. The purpose of the HADS is to determine to what extent a physically ill patient is experiencing symptoms of anxiety and depression (normal, borderline, or abnormal levels). Results of this assessment inform medical professionals of the patient's need for psychotherapeutic interventions. This 14-item (seven regarding depression, seven anxiety) self-report questionnaire takes approximately two to five minutes to complete. A previous dance/movement therapy study by Mannheim & Weiss (2006) utilized the HADS in their evaluation of dance therapy with cancer inpatients. A copy of the HADS (Zigmond & Snaith, 1983) can be found in Appendix F.

Brief COPE inventory. The Brief COPE (Carver, 1997) assesses methods of coping through multiple scales. The Brief COPE is a shortened version of the COPE inventory (Carver, Scheier, & Weintraub, 1989) made to minimize the demand or burden on participants. The original Brief COPE is a 28-item inventory with 14 scales, two items per scale. These scales include: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, venting, behavioral disengagement, positive reframing, planning, humor, acceptance, self-blame, and religion. The Brief COPE is a self-report measure that takes

approximately five to ten minutes to complete. Carver has utilized the Brief COPE on a sample with breast cancer. Also, this questionnaire is public domain, easy to access, and will therefore likely be used with other medical samples in future research. A copy of the Brief COPE can be found in Appendix G.

Pre test. Immediately after each participant enrolled in the study, the principal investigator distributed the pre test in an envelope. Participants were given 24 hours to complete the pre test in private unless they requested the principal investigator to read the survey questions aloud. The principal investigator returned to retrieve the completed pre test in person, and then labeled the document with a key code in order to protect participant confidentiality. This pre test was composed of three survey measures previously used for research in the medical setting: the Functional Assessment of Cancer Therapy-General (Cella et al., 1993), the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), and the Brief COPE inventory (Carver, 1997).

Post test. Participants completed the same surveys as close to the day of their discharge as possible. The principal investigator distributed the post test with the respective code number on it. Participants were given between one and 24 hours to complete the post test. The only difference between the post test and pre test was the addition of one qualitative question on the post test: “What new coping methods have you used during your most recent stay in the hospital?” Once the principal investigator retrieved the post test, she then informed that participant that the study was complete and deleted the participant’s name from the code key.

Researcher journal. The principal investigator collected qualitative data via a researcher journal. After each dance/movement therapy session the principal investigator answered three prompts in a journal entry. The first prompt was entitled “Data/Observations” and included the participant’s diagnosis, history, upcoming procedures, and personal stories.

The purpose of this prompt was to paint a general picture of how the patient was doing during that particular session. The second prompt, entitled “Interventions” asked what counseling or movement-based interventions the principal investigator used as the therapist. The third prompt, entitled “Response” inquired how the patient responded to these respective interventions. The format of the journal entry was modeled after a clinical progress note. In this particular clinical setting, treatment professionals write patient progress notes organized in the Data, Action, Response, Plan format or Subjective, Objective, Assessment, Plan format. A blank copy of a researcher journal entry can be found in Appendix H.

Data Analysis

Both quantitative and qualitative data were analyzed in this study. Quantitative data was analyzed by calculating the average amount of change for each numerical outcome within the intervention group and the control group. Qualitative data collected via the researcher journal was analyzed using the Chesler (1987) method of sequential analysis. The process of quantitative and qualitative data analysis will be described in more detail.

Quantitative data. Due to the low number of participants enrolled in each of the intervention and control groups, only mean difference scores were calculated for the pre and post test scores from each tool. The principal investigator originally intended to use these mean difference scores for statistical significance testing via a paired samples T-test, but at least 20 participants for each group is required to run such a test. Measures of central tendency were the only statistics applicable to this data set.

All numerical data was entered into a password-protected Microsoft Excel document. All raw pre test scores from the FACT-G (Cella et al., 1993), HADS (Zigmond & Snaith, 1983), and Brief COPE (Carver, 1997) were first entered into this document, followed by the participants’

respective age, gender, race, diagnosis, and length of stay. The raw post test scores from the FACT-G, HADS, and Brief COPE followed. Raw data from the intervention group was separated from the raw data of the control group in this document. Once all of this information was entered into the document, the principal investigator then calculated difference scores for each survey item by subtracting the pre test score from the post test score. These difference scores for each individual participant were organized into a cluster belonging to either the intervention group or the control group. Then these difference scores were averaged amongst the group for the purpose of comparing mean difference scores between the intervention group and the control group. This form of data analysis would provide a rough idea of which group changed more during their time in the hospital in terms of quality of life domains, levels of anxiety and depression, and ways of coping with cancer.

Qualitative data. After the conclusion of each individual dance/movement therapy session with a participant, the principal investigator completed a journal entry on that session. Each entry was stored on a password-protected computer and followed three prompts: Observations, Interventions, and Response (see Appendix H). The structure of the journal entry is similar to a clinical progress note. The purpose of including qualitative data in the study design was to provide a broader, less specific method of collecting data that standardized surveys would not include.

The method used to analyze the qualitative data was sequential analysis, developed by Mark Chesler in 1987 (Miles & Huberman, 1994). Sequential analysis follows a structured, seven-step process for coding qualitative data and deriving theory from the data. The seven steps are to underline key terms, restate key phrases, reduce the phrases and create clusters, reduce clusters and attach labels, generalize about the phrases in each cluster, generate minitheories, and

integrate theories into an explanatory framework. Each step is described in more detail. All seven steps are illustrated in a master table in Appendix I.

Step 1: Underline key terms in the text. Key terms included things that stood out, items that related to the hypothesis and research question either directly or indirectly, quotes from patients, and therapeutic interventions. The principal investigator viewed the electronic journal entries in Microsoft Word document form and highlighted the key terms using the Microsoft Word highlighting tool. A sample illustration of this step is as follows:

The patient briefly talked about how moving to music helped him to feel good, relaxed, and to clear his mind. The patient was very conversational and relaxed throughout the session. He feels optimistic and ready about the transplant process. He is a religious individual, mentioned believing in God helps him through the process.

Step 2: Restate key phrases. In restating the previously underlined key terms, “The idea is to remain as descriptive and literal as possible” (Miles and Huberman, 1994, p. 87). In other words, paraphrase the previously underlined key terms, understanding the context of the key terms, without losing any important data in the paraphrasing process. Some important quotes from participants were altered in this step to communicate the underlying message. For example, “My friends have flaked out” was changed to “lack of social support,” and “It’s just been one thing after another” was paraphrased as “persistent medical complications.” As the principal investigator reviewed the highlighted key terms from step 1, she then created a list of paraphrases for step 2. Table 1 illustrates a sample of a few key terms from step 1 restated for step 2.

Table 1

Key Phrases Restated into Paraphrases

Original Key Phrase (Step 1)	Restated Key Phrase (Step 2)
1. "What next?"	1. Anticipating next activity
2. "The superstar is gone!"	2. Decline in treatment process
3. Not able to do anything with his right hand	3. Physical limitations
4. "If I fall, I'm dead"	4. Concern for physical safety
5. Keeps himself busy	5. Distraction
6. Read info about procedure	6. Self-education
7. "What are we doing?"	7. Looking for direction from the therapist

Step 3: Reduce the phrases and create clusters. This step attempts to organize the paraphrases and find a pattern. The process of clustering phrases was executed by first printing out the phrases created in step 2 on paper, cutting apart each phrase, and moving each phrase on paper into clusters with similar content. This process yielded 26 different clusters. A sample of one cluster created in this step follows in Table 2. This cluster was organized based on content pertaining to personal safety.

Table 2

Sample Cluster of Organized Paraphrases

Sample Cluster
1. Scared
2. Fear of re-injury
3. Preparedness
4. Family concern about exceeding physical limits
5. Concern about port-a-cath
6. Hopes to go home soon
7. Concern for physical safety

8. Self aware of limits
 9. Injury prevention
 10. Avoidance of pain and discomfort
 11. Knowledge of endurance/self-awareness
 12. Caution for repeating injury
-

Step 4: Reduce clusters and attach labels. Miles and Huberman (1994) call this the process of pattern coding. In this step, the principal investigator viewed the 26 previously formed clusters through the lens of the hypothesis, looking for content relating to anxiety, depression, quality of life, and coping mechanisms. This created larger, *meta-clusters*. A total of 12 clusters were formed in this step. The label of each cluster and the frequency of corresponding phrases in the text follow in Table 3.

Table 3

Meta-clusters and their Frequencies

Cluster label	Frequency of phrases
1. Motivation for staying healthy	24
2. Physical quality of life	28
3. Social quality of life	5
4. Spiritual coping	8
5. Educational opportunities in treatment	12
6. Participant passivity	24
7. Obstacles in movement therapy	18
8. Depression	10
9. Anxiety	25
10. Fear and safety	15

11. Feeling Good	11
12. Relaxation	42

Note. The left column refers to the name of the *meta-cluster* determined in step 4. The right column refers to how frequently phrases corresponding to the respective *meta-cluster* appeared in the text.

Step 5: Generalizations about the phrases in each cluster. In this step the principal investigator reviewed the phrases in each *meta-cluster* and made generalizations about these phrases, which sheds light on how they were labeled. Table 4 lists each *meta-cluster*, the number of generalizations that pertain to each *meta-cluster* (cluster item), and the generalizations made pertaining to each *meta-cluster* of phrases.

Table 4

Generalizations pertaining to each meta-cluster

Cluster name	Cluster item	Generalizations about each cluster
1. Motivation for staying healthy	1A	Some patients want to stay active and mobile while in the hospital.
	1B	Some patients try to stay motivated to be physically healthy by walking the hallways or participating in dance/movement therapy.
	1C	Motivation for staying healthy comes from both intrinsic (from the patients themselves) and extrinsic (from nurses, doctors, and family members) sources.
2. Physical quality of life	2A	Some participants had physical limitations and fatigue that were considered in the formation of movement interventions.
	2B	Patients are generally more sedentary in the hospital than in their daily lives.
	2C	Some patients experienced pain and nausea that deterred them from moving.

3. Social quality of life	3A	Patients seek social support to cope with their illness.
4. Spiritual quality of life	4A	Patients look to religion and spirituality to cope with their illness, such as prayer and faith in God.
5. Educational opportunities in treatment	5A	Patients educate themselves about cancer treatment, such as the transplant process, medical procedures, side effects of treatment, and nutrition.
	5B	Participants used dance/movement therapy as a means to learn about their bodies and efficient movement.
6. Participant passivity	6A	Participants in dance/movement therapy looked for guidance from the therapist in movement interventions.
	6B	During most dance/movement therapy sessions, the therapist gave movement directives and the participant followed the movements of the therapist.
	6C	The therapist encouraged patients to lead movement, but most did not feel efficacious to do so.
	6D	Participants had difficulty developing personal goals for movement therapy.
7. Obstacles in dance/movement therapy	7A	Some participants in the intervention group reported body self-consciousness and self-deprecating statements about their bodies.
	7B	A lack of groundedness and mindfulness during movement interventions was present in a few participants.
	7C	Misunderstanding of movement interventions led to difficulty performing them.
	7D	There were a number of disruptions during movement therapy sessions, such as visits from medical

		professionals, nurses checking vital signs, phone calls, and nausea.
8. Depression	8A	Some participants displayed symptoms of depression such as anhedonia and tearful emotions.
	8B	Facing mortality and idleness while in the hospital contributed to depressed mood.
9. Anxiety	9A	Participants displayed symptoms of anxiety such as trouble sleeping, tension, stress, frequent clock-checking, anticipation, and feeling overwhelmed.
	9B	Symptoms of anxiety appeared in dance/movement therapy sessions via shoulder tension, strained movement, bound flow, and physical discomfort.
10. Fear and safety	10A	Some participants had fears and concerns about their physical safety, which was taken into consideration in the formation of movement interventions.
	10B	Fear for personal safety stemmed from a general feeling of fragility as a cancer patient, lack of endurance, physical limitations, and fear of reinjuring a previous injury.
	10C	Patient's self awareness of their physical limitations helped them to feel safe, which was encouraged and supported in dance/movement therapy.
11. Feeling good	11A	Multiple participants reported "feeling good" in dance/movement therapy sessions.
12. Relaxation	12A	Most dance/movement therapy sessions incorporated relaxation techniques.
	12B	Music, closing of the eyes, breath, grounding, self-touch, and tension release exercises aided feelings of

relaxation in participants.

12C

A relaxed mind and body resulted in more free flow in participants.

Step 6: Generating minitheories. The following “minitheories” (Miles & Huberman, 1994, p. 88) directly follow the generalizations formed in Step 5, synthesizing the generalizations about each cluster and posing explanations.

1. Patients who are motivated to stay physically healthy are more likely to participate in dance/movement therapy than those who are not.
2. Physical limitations such as pain, nausea, fatigue, and past injuries are important to consider in the formation of dance/movement therapy interventions.
3. Social support is a means of coping with cancer.
4. Religion and spirituality are a means of coping with cancer.
5. Dance/movement therapy can be used to educate patients, which assists in coping with medical illness.
6. Patients assumed a passive role in most dance/movement therapy sessions.
7. Patients experienced difficulties in dance/movement therapy sessions related to body self-consciousness, a lack of mindfulness, misunderstanding movement directives, and disruptions.
8. Some patients experienced depression while receiving treatment for a blood cancer diagnosis.
9. Anxiety is manifested in the body and is observable in dance/movement therapy sessions.
10. Dance/movement therapy supported personal safety, as patients have multiple fears about their bodies.
11. Dance/movement therapy sessions created a sense of “feeling good” in participants.
12. Relaxation interventions were an important part of many dance/movement therapy sessions.

Steps 1 through 6 can be found all together in a master table (see Appendix I).

Step 7: Explanatory framework. This step connects all clusters and *minitheories* into an explanatory framework. It also derives a central theme from a large amount of data. Because the final step of the sequential analysis method reports the findings from this data analysis method, step 7 is reported in the Results chapter.

Conclusion

This study followed a quasi-experimental design and used mixed methods with both quantitative and qualitative data. Quantitative data was collected for the intention of statistical analysis with a paired samples T-test; however, due to the small sample only measures of central tendency and mean difference scores were computed. The addition of qualitative data analysis via the sequential analysis method provided more information on the effects of dance/movement therapy for hematological cancer inpatients that the quantitative data could not accomplish. The sequential analysis brought out important themes in participants' responses to movement interventions. These themes will be discussed further in the discussion.

Chapter Four: Results

This study hypothesized that if hematological cancer patients participated in three or more dance/movement therapy sessions, then they would find a greater quality of life, decreased feelings of anxiety and depression, and an improvement in coping methods. The principal investigator intended to support this hypothesis via a statistical test of significance comparing intervention and control group measures for each factor; however, due to the low enrollment, statistical testing of quantitative data could not be completed. Mean difference scores could be computed using the quantitative data collected, allowing for numerical comparisons between the intervention and control groups; however, the principal investigator could not determine if these scores were significantly different. In other words, one cannot determine that the post test scores were the direct result of dance/movement therapy and not due to chance.

Results from analyzing qualitative data led to a deepening of understanding the effects of dance/movement therapy on the hypothesized outcomes. The principal investigator utilized the sequential analysis method, developed by Chesler (1987), to analyze qualitative journal entries. Using this method qualitative data from the researcher journal was coded via organization into clusters categorized by the variables of the study hypothesis. The frequency of phrases pertaining to each cluster and the explanatory framework integrating all of the themes together shed more light on how much dance/movement therapy affected the dependent variables.

Quantitative Data

Quantitative data came from pre and post test scores of the Functional Assessment of Cancer Therapy-General (Cella et al., 1993), the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), and the Brief COPE (Carver, 1997). The principal investigator found the means of the post test scores and pre test scores for the control group and the intervention

group and then subtracted the mean pre test scores from the mean post test scores. The purpose of calculating mean difference scores with the raw data was to find the average amount of change over time for each outcome variable between the intervention group and the control group. The principal investigator could then compare the differences over the course of treatment between the intervention group and the control group. By computing mean difference scores for both the intervention and control groups within each outcome variable, the principal investigator then created figures of these results to visually describe changes in outcome variables over time. Bar graphs were chosen to illustrate the data because they clearly show the reader which scores increased over time and which scores decreased over time. In addition, bar graphs allow for a side-by-side comparison of the intervention and control groups' scores for each factor. The following figures and their descriptions highlight the greatest changes in each variable for both the intervention and control groups.

Quality of life. The Functional Assessment of Cancer Therapy-General (Cella et al., 1993) generates a total Quality of Life score, as well as a score for Physical Well-Being, Social Well-Being, Emotional Well-Being, and Functional Well-Being subscales. By computing the mean difference scores for each group (average post test score – average pre test score), the results were as follows in Figure 1.

Figure 1.

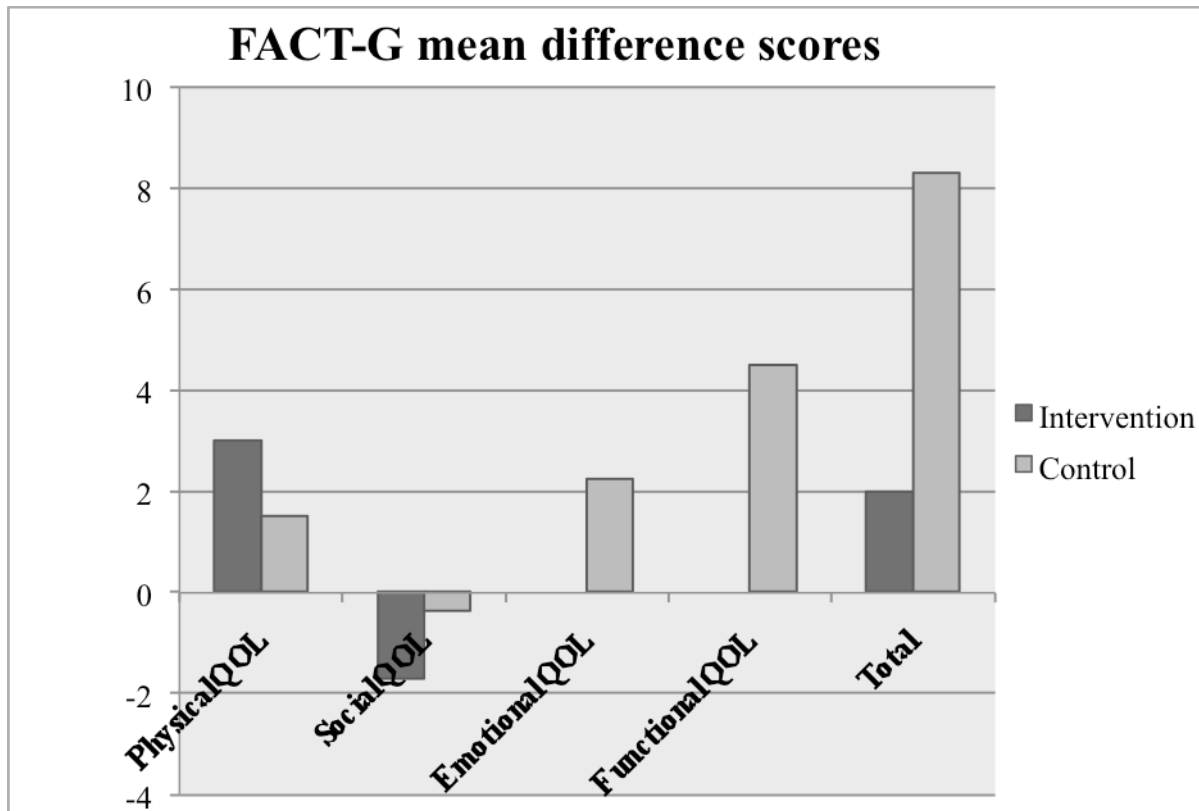


Figure 1. The dark gray bars represent the average difference between the post test scores and the pre test scores for intervention group members. The light gray bars represent the average difference between the post test scores and the pre test scores for control group members. Those subscales with no dark gray bar (Emotional and Functional quality of life) indicate that there was no change (on average) in pre and post test scores for intervention group members within these subscales.

The control group shows greater improvements in Emotional and Functional Well-Being, as well as total quality of life than the intervention group over the course of inpatient treatment. On average, there was no change in emotional and functional well-being for those in the intervention group. Both groups saw a decrease in social well-being (likely due to the isolative nature of inpatient treatment). However, the intervention group saw a greater increase in physical well-being than the control group.

Anxiety and depression. The Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) provides a score for anxiety, a score for depression, and a numerical range for each

score corresponding to a normal, borderline, or abnormal level of anxiety and/or depression. A score of 0 to 7 signifies a normal level of anxiety or depression; 8 to 10 signifies a borderline abnormal level of anxiety or depression, and a score from 11 to 21 indicates an abnormal level of depression or anxiety (Zigmond & Snaith, 1983).

Figure 2.

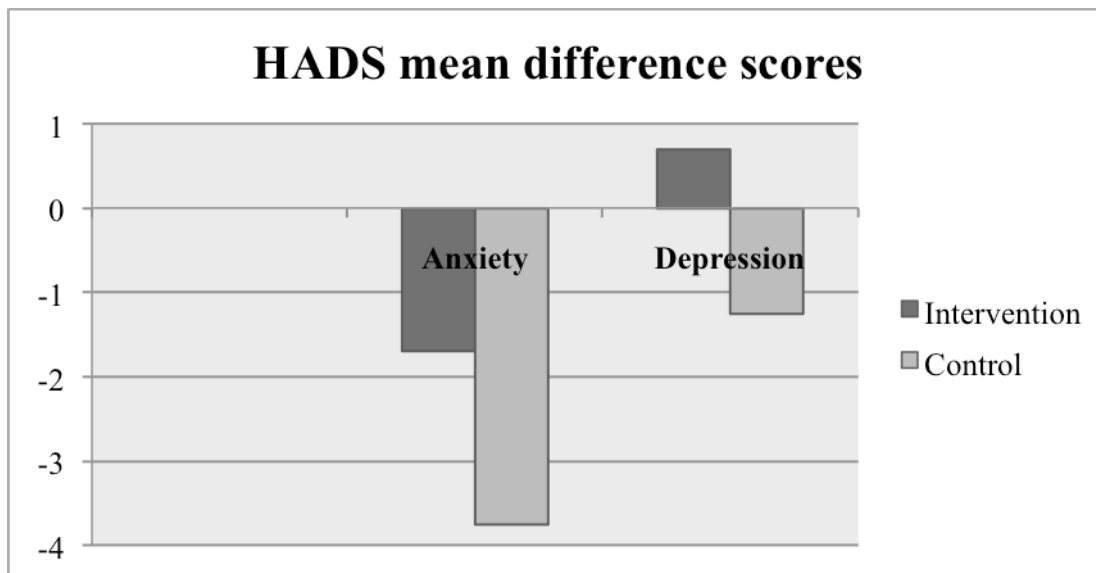


Figure 2. The dark gray bars represent the average difference between the post test scores and the pre test scores for intervention group members. The light gray bars represent the average difference between the post test scores and the pre test scores for control group members. All bars below 0 on the x-axis indicate a decrease in averaged scores over time. The bar above 0 on the x-axis indicates an increase in the averaged scores over time.

As shown in Figure 2, participants in the control group showed decreased levels of anxiety and depression over the course of inpatient treatment. Intervention group participants saw a smaller decrease in anxiety than control group participants, and an increase in depression over time.

This result is due to an outlier difference score from one participant in the intervention group whose depression score increased by three. Taking a closer look at the data, the intervention group averaged a normal level of anxiety ($m=6$) HADS pre test, whereas the control group averaged a borderline level of anxiety ($m=9$) at the beginning of treatment. Both groups

averaged a normal level of anxiety in post test measures. This explains for the greater difference in anxiety between groups because the control group was more anxious than the intervention group at the beginning of treatment.

Coping. The Brief COPE inventory (Carver, 1997) measures how frequently one uses certain ways of coping by rating how frequently one uses a method of coping on a scale from one to four. The inventory includes 14 ways of coping via the following scales: Self-Distraction, Active Coping, Denial, Substance Use, Use of Emotional Support, Use of Instrumental Support, Venting, Behavioral Disengagement, Positive Reframing, Planning, Humor, Acceptance, Self-Blame, and Religion. Figure 3 shows the mean difference scores of each scale for both groups.

Figure 3.

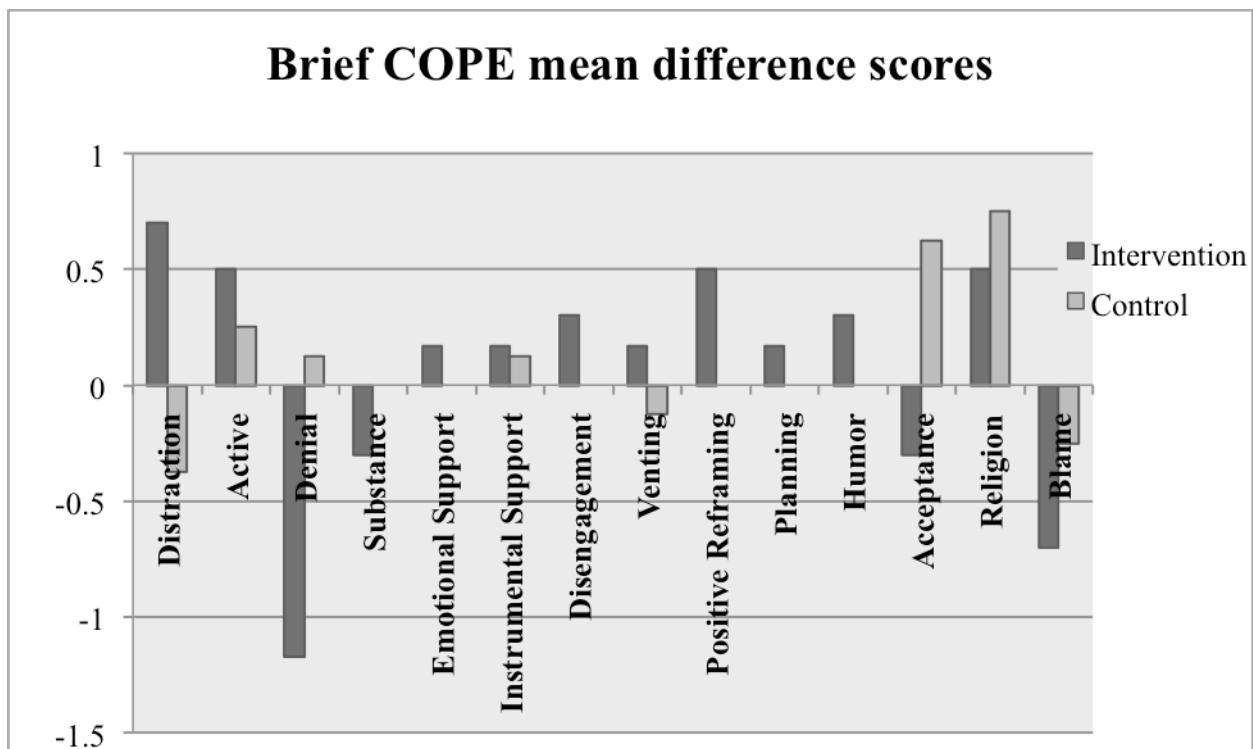


Figure 3. The dark gray bars represent the average difference between the post test scores and the pre test scores for intervention group members. The light gray bars represent the average difference between the post test scores and the pre test scores for control group members. All bars below 0 on the x-axis indicate a decrease in averaged scores over time. The bars above 0 on

the x-axis indicate an increase in the averaged scores over time. The absence of a light gray bar indicates no average change over time within the respective subscale.

Due to the small Likert scale used for the Brief COPE inventory (one to four), there are small differences between post test and pre test scores. The greatest mean difference within the intervention group was in the Denial scale ($m = -1.17$). In other words, participants in the intervention group denied their medical condition less over the course of inpatient treatment, more so than those in the control group who averaged an increase in denial coping by 0.125. The next two greatest changes in coping by intervention group members were from the Distraction and Self-Blame scales ($m = 0.7$ and $m = -0.7$, respectively). The intervention group saw greater changes in all coping scales, with the exception of Acceptance and Religion scales. Control group members were more accepting of their cancer than intervention group members, and also used prayer and religious beliefs to cope with their cancer more than their intervention group counterparts. The control group averaged no change in Substance Use, Use of Emotional Support, Behavioral Disengagement, Positive Reframing, Planning, and Humor coping scales.

Quantitative Data Conclusions

The researcher could not draw definitive conclusions from quantitative findings due to the size of the data pool. Only results that could be analyzed were reported here. Quantitative results of quality of life measurements showed that the control group had greater improvements in all quality of life domains except physical quality of life. Both groups saw a decrease in anxiety levels over the course of treatment. The control group had a greater decrease because they reported more anxiety in the pre test than the intervention group. The intervention group averaged a slight increase in depression over time due to an outlier in the data set. Quantitative data analysis of the Brief COPE subscales showed that the intervention group saw greater changes than the control group in all scales except Acceptance and Religion.

Qualitative Data

Qualitative data was collected from two sources: a final question at the end of the post test distributed to all participants and observations from the researcher's point of view recorded in a researcher journal. Data from the researcher journal was analyzed with the Chesler (1987) method of sequential analysis. Steps 1 through 6 were described and reported in the previous chapter. The results of the final step 7 will be reported in this chapter.

Post test data. All post test surveys included one qualitative question: "What new coping methods have you used during your most recent stay in the hospital?" From the intervention group, two individuals responded with: "talking, pray" and "coloring some pictures making puzzles to keep my mind thinking [about] other things than my illness." From the control group, two individuals responded with "just praying and having faith" and "taken up watercolors to relax." Table 5 visually illustrates these results.

Table 5

Responses to "What new coping methods have you used..."

Group	Participant Response
Intervention	talking, pray
	coloring some pictures making puzzles to keep my mind thinking [about] other things than my illness
Control	just praying and having faith
	taken up watercolors to relax

Researcher journal. Results from step 4 in Chesler's sequential analysis method, previously reported in Chapter Three, are reported again in this section. *Meta-clusters* are listed in the order in which they were created from the sequential analysis method.

Table 3

Meta-clusters and their Frequencies

Cluster Label	Frequency of phrases
1. Motivation for Staying Healthy	24
2. Physical Quality of Life	28
3. Social Quality of Life	5
4. Spiritual Coping	8
5. Educational Opportunities in Treatment	12
6. Participant Passivity	24
7. Obstacles in Movement Therapy	18
8. Depression	10
9. Anxiety	25
10. Fear and Safety	15
11. Feeling Good	11
12. Relaxation	42

Step 7 from the sequential analysis method discusses each of the clusters coded into step 4 in more detail. The results from step 7 (integrating all theories into an explanatory framework) are as follows:

Qualitative data collected and analyzed from the researcher journal was two-fold. It revealed the challenges the patients faced (physical discomforts, depression, and anxiety), and how these challenges were dealt with (either from the patients themselves or the therapist's interventions). One challenge seen repetitively in the data was a fear for personal safety; participants were protective of their bodies due to feelings of pain, nausea, fatigue, and knowledge of previous injuries and physical limitations. All of these physical discomforts were

taken into account in dance/movement therapy sessions so as to alleviate them as much as possible. For example, a patient warned the dance/movement therapy intern that she was feeling nauseous so all movement interventions performed in this session involved body parts excluding the stomach area. Somatic complaints may have contributed to the frequent observable body language signifying anxiety; the dance/movement therapist observed tension in multiple areas of the body resulting in bound flow and restricted breathing. Other obstacles came into play during dance/movement therapy sessions such as disruptions from staff, participant's misunderstanding of movement interventions, or their lack of engagement and investment into their movement. Symptoms of depression arose as well in the form of tearfulness, feelings of isolation, facing one's mortality, as well as idleness, boredom, and apathy. This apathy translated into patient passivity during dance/movement therapy sessions. Frequently patients hesitated to take the lead of their own sessions or form their own goals and instead looked to the therapist to guide them through every step of a session.

To counteract the challenges described, patients turned to various methods of coping. Spiritual coping, like prayer and having faith in God, helped all of the intervention group members. Social support as a means of coping came up with similar frequency. Patients appreciated support from their friends, family, and other patients on the unit. One patient described his family obligations as a driving force to get healthy. Some patients were motivated to remain physically healthy whether the motivation came from the patient himself or other persons (such as a medical professional or family member). This motivation turned out to be an important factor in the patient's investment into dance/movement therapy, counteracting passivity and encouraging proaction. To address symptoms of anxiety, dance/movement therapy frequently incorporated relaxation and tension-release exercises. These exercises relaxed

participants' minds and bodies simultaneously as evidenced by their increase in free flow, a decelerated use of time, changes in affect, and verbalizations of feeling relaxed. It was during these exercises, as well as the end of a session that participants reported "feeling good." The dance/movement therapist encouraged personal safety by reinforcing their self-awareness, kinesthetic awareness, and mindfulness. This particularly came into play when the dance/movement therapist educated patients about their bodies as they moved certain body parts.

For example, one patient wanted to improve her posture in dance/movement therapy sessions but often strained her muscles and breath to achieve a better posture. The dance/movement therapist used concepts from the Evan functional technique and experiential anatomy to help her find a comfortable posture. Educating the participant about the kinesiology of her spine was critical to helping her find a comfortable posture. Participants were intrigued by new information and eagerly assumed the student role. Patients also had to learn a lot about the process of inpatient cancer treatment, particularly stem cell transplants, to cope with the stress of the complex procedure. It appeared that education came into play various ways throughout treatment and became a means of coping.

The central theme tying the two sides of the qualitative data together stems from the Fear and Safety cluster. Fear may be the common culprit underlying all of the challenges these patients face during inpatient hematological cancer treatment, which surfaced in dance/movement therapy sessions. Patients may fear for their lives as they are faced with their own mortality and wait for results that may or may not read that their bodies are cancer-free. They fear for the condition of their bodies, trying to figure out if their bodies are strong enough to perform certain movements without adverse consequences. They fear if they will be able to fulfill their responsibilities to their families and to their employers. Creating safety arose as the

best medicine for fear. In dance/movement therapy, relaxation exercises and other movement interventions helped participants to feel in control of their bodies and minds after cancer had taken over a major system of their bodies, resulting in significant psychological stress. Rather than feeling anxious and fearful in the hospital, participants in dance/movement therapy had the opportunity to “feel good.” Patients also took comfort in the safety of their social support network and their faith in God. Receiving education about the many medical facets of cancer treatment provided patients with safety by minimizing the unknown and unpredictability throughout a multi-week process. Dance/movement therapy provided participants with education about their bodies as well, providing them with tools to keep their bodies physically safe and more efficient.

Qualitative Results Conclusions

The final step of qualitative data analysis, the Chesler (1987) method of sequential analysis, revealed issues of fear and safety as a central theme that came into play during cancer inpatient treatment and dance/movement therapy therein. Fear can account for many symptoms of psychological distress reported by participants in this study: anxiety, tension, stress, depression, apathy, and not being able to meet family and work obligations. Safety, the counterpart to fear, was fostered in participants’ own methods of coping (social support and spirituality) and in dance/movement therapy sessions. By learning how to control their bodies through knowledge of kinesiology, efficient movement, and patterns of total body connectivity, participants had the opportunity to regain a sense of safety and control within their rehabilitating bodies during dance/movement therapy.

Conclusion

Definitive conclusions could be not made from quantitative analysis, though the results of

qualitative analysis methods showed support for the efficacy of dance/movement therapy. By coding certain themes that emerged in dance/movement therapy sessions we now have a better idea of what dance/movement therapy helps the hematological cancer inpatient accomplish during treatment. That is dance/movement therapy helps the patient to find safety and a sense of “feeling good” in their bodies. In addition, movement interventions facilitated by the dance/movement therapy intern helped the participants to release stress and tension from their minds and bodies. These findings contribute to a portion of the hypothesis that if patients participated in dance/movement therapy, then they would see a decrease in symptoms of anxiety and an improvement in coping. Both quantitative data results and the themes that emerged in qualitative data show less information about the effects of dance/movement therapy on symptoms of depression than expected. The intervention group saw an increase in depressive symptoms throughout the course of treatment and paraphrases related to the depression theme were of relatively low frequency.

Chapter Five: Discussion

This study was the first dance/movement therapy research study to focus exclusively on hematological cancer inpatients as opposed to multiple cancer diagnoses. The purpose of this study was to evaluate the effects of dance/movement therapy in a cancer treatment setting on three specific outcomes related to well-being and psychological adjustment. The research hypothesis was that if hematological cancer patients participated in three or more dance/movement therapy sessions, then they would find a greater quality of life, decreased feelings of anxiety and depression, and an improvement in coping methods. The findings of this study were intended to provide support for incorporating dance/movement therapy services onto a list of researched complementary therapies endorsed by the integrative medicine paradigm. Because the cancer integrative medicine program at the study site only provides complementary therapies that have empirical evidence, this study followed a quasi-experimental design with quantitative data and supplemental qualitative data. The findings showed that individual dance/movement therapy sessions for hematological cancer inpatients improved their physical quality of life by educating them about their bodies and motivated them to remain physically healthy. Dance/movement therapy also helped patients to reduce anxiety by releasing tension and stress that is stored in the body. The findings did not fully support that dance/movement therapy improved all domains of quality of life nor did it consistently decrease depressive symptoms. The following paragraphs discuss both forms of data in more detail.

Quantitative Data

Quantitative data were collected from pre and post test scores on the Functional Assessment of Cancer Therapy –General (Cella et al., 1993), the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), and the Brief COPE (Carver, 1997). In order to

analyze these data, the principle investigator calculated the average difference between the post test scores and the pre test scores for each group (intervention group and control group). Results of the quantitative data analysis are discussed in terms of each type of outcome variable: quality of life, anxiety and depression, and coping.

Quality of life. Results from the quality of life measures were unexpected. Only physical quality of life improved for the intervention group patients, whereas the other quality of life domains changed very little. There were likely many extraneous factors within the medical setting that contributed to these scores. For example, dance/movement therapy can do little to improve social quality of life when the patient was isolated to prevent infection. Like this study, Dibbell-Hope (2000) measured multiple factors in her hypothesis (mood, psychological distress, body image, and self-esteem). After quantitative data analysis of all factors, she only found significance in mean difference scores related to physical well-being, specifically the bodily-based symptoms vigor and fatigue. The principal investigator speculated that participants in this study acknowledged the physical benefits of dance/movement therapy interventions, but they did not cognitively make the connection of how dance/movement therapy may have helped their coping or psychological adaptation to cancer. Perhaps the same phenomenon occurred for those participants in the Dibbell-Hope (2000) study.

Anxiety and depression. Quantitative results of the HADS (Zigmond & Snaith, 1983) do not support the hypothesis pertaining to anxiety and depression. Both groups saw a decrease in anxiety levels, but the control group saw a greater decrease than the intervention group. There are a number of factors that could account for this, such as prognosis, previous history of anxiety, or the control group members personal means of dealing with anxiety, to name a few. The mean difference score for depression actually increased within the intervention group. This

was due to an outlier within the intervention group whose depression increased by three; the other two intervention group members' depression scores decreased by zero and one.

Coping. Mean difference scores from the Brief COPE Inventory read that both the intervention and control group increased their usage of religious coping during inpatient treatment. Chaplain services are readily available to all patients on the unit. It seemed that the majority of patients met with the chaplain on a regular basis while in the hospital. Intervention group members used the two social support subscales (Use of Emotional Support and Use of Instrumental Support) more so than control group members in these subscales. In other words, the intervention group sought moral support, understanding, or sympathy as well as getting information, advice or assistance from others more so than their control group counterparts (Carver, Scheier & Weintraub, 1989).

The dance/movement therapist could account for some of this difference, although many other individuals inside and outside the unit could support patients instrumentally and emotionally. Interestingly, the two subscales from the Brief COPE (Carver, 1997) that saw the greatest differences between the intervention and control groups were the Distraction and Denial subscales. Intervention group members increased their use of distractive coping techniques while control group members reported a decrease in distractive coping techniques.

Dance/movement therapy can account for this difference because some patients and staff members viewed dance/movement therapy as a distraction for patients to think about things other than the illness or the stressors associated with illness (see Table 5). Also, intervention group members decreased denial of their illness over the course of treatment while control group members slightly increased their denial. It is difficult to say if dance/movement therapy could account for this difference. One explanation may be that dance/movement therapy improves

body awareness, which can bring to light the psychosomatic effects of a life-threatening illness.

The decrease in denial, however, did not come with more acceptance of the illness. These results were the opposite; control group members were more accepting of their illness than intervention group members.

Conclusion

A number of factors contributed to the quantitative results. One major consideration is the decreased group size. The higher the sample size, the more reliable quantitative data is. This sample size is not a reliable number to draw definitive conclusions or to determine that the effects of dance/movement therapy are not simply due to chance. Nor can one determine that the participant pool of this study is representative of the blood cancer population. The principal investigator anticipated enrolling approximately 40 participants for the study over a 10-week time span, however this did not happen. For personal reasons, the principal investigator chose not to prolong the study until the requisite number of participants were enrolled. Furthermore, the availability of the principal investigator was restricted to three consecutive days, which could also limit participation. One reason for the low enrollment is that the census on the unit was low while the study was executed. Most patients came to the unit for short (one-week) stays, which did not give them adequate time to participate in three or more dance/movement therapy sessions.

Another factor to consider in looking at the variable quantitative data is that the participants' length of stay ranged from eight days to 60 days, a vast difference when taking into account the kind of environment where participants resided during that time. The longer the patient stayed at the hospital, the more time he or she had to acclimate to the environment and benefit from all the services provided.

Qualitative Data

Using Chesler's method of sequential analysis to analyze qualitative data from the researcher journal, 12 major themes arose regarding patients' psychosocial and physiological concerns during treatment and their interaction with dance/movement therapy interventions. These themes were integrated into an explanatory framework in the Results chapter and they will be described individually in more detail here.

Motivation for staying healthy. As discussed in the previous chapter, both intrinsic and extrinsic motivation played roles in participants' drive to be as healthy as possible during inpatient treatment. The results from the first cluster of data (Motivation for Staying Healthy) are consistent with the advice given to stem cell transplant receivers by the Bone Marrow Foundation (2011). The Bone Marrow Foundation advised receivers be an active part of their care, stay focused on their goal of getting healthy, and to take care of themselves through proper exercise and nutrition. Specific exercises to do in the hospital are exercises that can be done in bed and walking laps around the unit. Dance/movement therapy sessions often incorporated both of these recommendations into the warm-up portion of the session.

Physical quality of life. When asked what goals participants may have for dance/movement therapy sessions, the most common responses pertained to physical quality of life, such as getting in shape, increasing flexibility, improve posture and endurance. Meanwhile, participants were also aware of physical limitations that needed to be taken into account in the formation of all movement interventions. Some of these limitations included neuropathy, edema, nausea, pain, and medical equipment (i.e. IV, port-a-cath). It was observed in dance/movement therapy sessions that participants were attempting to meet these goals both during and outside of sessions. One patient walked 33 laps around the hallways almost every day. It was observed in

another patient that he increased his endurance, range of motion, ease of motion, and accessed more body parts over the course of six dance/movement therapy sessions. It appeared that some participants in dance/movement therapy sessions wanted to demonstrate they were still strong despite the physically taxing treatment. As Seides said in 1986, “Movement can help to re-establish a sense of body integrity” (as cited in Goodill, 2006, p. 56).

Social quality of life. Because social support was a common way for participants to cope with their illness, future dance/movement therapy services with this population should attempt to provide sessions in a group setting. There are, however, multiple barriers to building a group in an inpatient hospital unit. Not only is it difficult to persuade individual patients to participate in dance/movement therapy, but it is even more difficult for multiple patients to participate at the same time. Appointments, visitors, personal hygiene, and side effects from treatment often deterred patients from joining a session at a specific time. Space may be an issue as well, both availability and environmental factors. Any time a patient left his or her room, they were required to wear at least a mask and gloves to protect themselves from infection. Often the masks were uncomfortable for the patients, particularly during breathing exercises, and they also made it more difficult for the therapist to read facial expressions. Some of these barriers to group formation may be alleviated by communicating with hospital staff. Finding an appropriate space, advertising the group, and informing hospital staff members of the service are key steps to developing a dance/movement therapy group. However, it simply may be more appropriate for outpatients to participate in group dance/movement therapy, as there are fewer treatment side effects during the outpatient phase of treatment.

Because patients are isolated to their rooms, the therapeutic relationship between dance/movement therapist and patient is important to counteract feelings of isolation. One

patient reported in a dance/movement therapy session that he appreciated the company above anything else. The importance of the therapeutic relationship is a key element in differentiating dance/movement therapy from mind/body interventions. Whereas mind/body interventions involve the facilitator directing the patient through formulated exercises, dance/movement therapy requires the development of rapport between the therapist and the patient (Goodill, 2005). Building the relationship inspired themes and interventions in future dance/movement therapy sessions. For example, in the process of establishing rapport, one patient described to the therapist his Mexican heritage. The principal investigator then directed the patient to teach her cultural Mexican dances. The patient proceeded to teach the therapist three different partnered Mexican dances. This was a pronounced occasion when the patient was not passive in the session but rather directed the activity.

Spiritual coping. Aldwin (2007) recognized the social component of spiritual coping and suggests that a deity is someone individuals can talk to during times of distress. Comments from research participants suggested they take comfort in the presence of their deity. For example, one participant was knowingly running out of treatment options as he waited for the results of a donor lymphocyte infusion. Once he received the good news that his body was positively responding to this procedure he was thankful to God for “putting [him] in the right direction.” Patients could also take comfort in the presence of other religious individuals on the unit such as patients and chaplain services.

A goal of dance/movement therapy is to help clients integrate the mind, body, and spirit (Dibbell-Hope, 2000). In this study, a sense of spirituality came into play implicitly during dance/movement therapy interventions, but patients did not explicitly connect the movement intervention with their own spirituality. Rather it was observed by the dance/movement therapy

intern. For example, during one particular session the dance/movement therapy intern directed a patient through moving the six patterns of total body connectivity (Hackney, 1998). The patient responded with pronounced changes in affect; his face became relaxed and peaceful as he simultaneously smiled with tears in his eyes. In the researcher journal, the principal investigator described this moment as the “patient connecting to spirituality.” When asked to describe his movement experience, the patient responded that it was “meditative” and thereafter referred to dance/movement therapy interventions as meditation. Cohen (1997), a dance/movement therapist, categorized both meditation and dance/movement therapy as mind/body interventions that “bring about a sense of wholeness... and link to healing and spirituality” (as cited in Goodill, 2005, p. 48). It seems from the evidence accumulated in this study that dance/movement therapy elicits a sense of spirituality but not necessarily a spiritual experience explicitly connected with the individual’s formal religion.

Educational opportunities in treatment. Qualitative data revealed multiple ways patients cope with cancer, some of which are not measured in the Brief COPE Inventory. One that stood out in qualitative data analysis arose in the fifth cluster, Educational Opportunities in Treatment. Data suggested that patients coped better with their illness when they took advantage of opportunities to educate themselves about the many facets of living with cancer. Literature from the Bone Marrow Foundation (2001) asserted a similar claim: “Experts say that being informed and having realistic expectations about transplant therapy can help you better negotiate the twists and turns that may occur along the path.” Sherman and colleagues (2007) found that in terms of the content and goals of psychotherapy interventions, cancer patients (on average) preferred learning about the illness and treatment far more than any other intervention. Interestingly, Multiple Myeloma represented the highest percentage (32%) of all cancer

diagnoses examined. Furthermore, Fawzy, Fawzy & Canada (2000) identified several studies in which education was an important programming for cancer patients because of its improvement in knowledge and treatment compliance.

Dance/movement therapy services followed this trend by educating patients about their bodies as they moved different body parts. Past research found that cancer patients were interested in the learning aspect of dance/movement therapy as well. In their study of dance/movement therapy with cancer inpatients, Mannheim & Weis (2006) asked participants “What did dance therapy do for you personally?” (p. 66). Content analysis of responses to this question revealed that learning was the second most popular category of responses. In this study, sequential analysis of dance/movement therapy session summaries revealed that educational opportunities in cancer treatment was the eighth most frequent cluster of phrases within the session summaries. The qualitative data in this study suggested that patients wanted to learn about the many facets of cancer and treatment, which included learning about their own minds and bodies.

Participant passivity. Most dance/movement therapy participants viewed dance/movement therapy as a class in which the therapist was the teacher and they were the students, similar to the relationship between patients and providers described in mind/body interventions (Goodill, 2005). During sessions, participants asked the therapist questions like: “What are we doing today?” “What next?” “Is there more?” and “What does this [intervention] do?” Because patients in these circumstances were looking to external sources of support and safety (family, friends, God, etc.) it makes sense they would resource the skills of the therapist automatically rather than innately resourcing the power they have within themselves and their own bodies. Cancer treatment puts patients in vulnerable positions in which their bodies are

subjected to intrusive treatments. The principal investigator sought to instill personal autonomy in dance/movement therapy participants such that they were the individuals *doing*, rather than being *done to*. Dance/movement therapy is an opportunity for participants to feel in control of their bodies when they may feel as if cancer has taken control of their bodies. Through application of Bartenieff Fundamentals and the Evan functional technique, dance/movement therapy educated patients on how to efficiently and safely move their rehabilitating bodies through space. Dance/movement therapy encouraged kinesthetic awareness and expanded the patients' movement repertoire such that they were able to acknowledge their limits, feel safe and in control.

As Goodill (2005) noted, mind/body interventions allow for the patient to assume a passive role by following the instructions of the mind/body practitioner. Because the principal investigator incorporated mind/body interventions into dance/movement therapy sessions, it makes sense that passivity arose as a frequent theme in the qualitative data. The reason for incorporating mind/body interventions in dance/movement therapy, particularly during initial sessions, was due to the familiarity of mind/body interventions within the hospital culture. Dance/movement therapy was completely new and unfamiliar to all participants and consequently intimidating. The principal investigator determined it best to introduce dance/movement therapy to participants and maximize participation with formulated and familiar exercises from mind/body disciplines. Her description of dance/movement therapy to each participant stressed the integration of mind and body (the mind effects the body and vice versa) and included a list of concrete methods like gentle stretching and relaxation techniques. Perhaps this description of dance/movement therapy invited participants to assume a passive role. During the first few sessions the principal investigator was still working towards the goal of promoting

mind/body integration and body-based coping skills using mind/body interventions. Gradually, the participants engaged with the therapist in more interactive, symbolic, improvisational, and creative interventions that are unique to the practice of dance/movement therapy. The general pattern of interactions with patients grew from concrete interventions to more relational, subjective experiences. Due to the short stay of most patients on the unit and in this study, few participants were able to get to this subjective point. The lack of improvisational and subjective dance/movement therapy methods is reflected in the qualitative data. For example, refer back to Table 3 and the categories of phrases that appeared most frequently throughout the qualitative data. These categories, or *meta-clusters*, reflect the concrete and objective facets of cancer treatment experienced by multiple patients; several patients reported their physical limitations, anxieties related to work and family obligations, and motivations for staying active and learning how to cope with their illness. The *meta-cluster* entitled feeling good may pertain to patients' subjective experiences during dance/movement therapy interventions. This category will be discussed later in more detail.

Obstacles in dance/movement therapy. Many, if not all, obstacles identified in this cluster could be alleviated with communication and encouragement from other hospital staff members: doctors, nurses, psychologists, etc. A few patients did not want to enroll in the study without first discussing it with their doctor. Furthermore, Hardy and colleagues (2010) reported that patients prefer their physicians to initiate discussion and referral to complementary, alternative, and integrative medicine (CAIM) and to follow them throughout the course of CAIM therapies. It seems that doctors are the primary group that would benefit from education or in-service regarding medical dance/movement therapy goals. Hopefully, dance/movement therapy will have a growing presence and importance in the medical field such that medical

professionals will refer patients to a dance/movement therapist for services. Goodill (2005) agreed: “It is important that dance/movement therapists and their colleagues in other health care specialties find ways to forge new working relationships that will yield creative clinical programming and research. In my view, this is the only way DMT services can be made available and relevant to people struggling with medical illness” (p. 22).

Feeling good. Multiple dance/movement therapy participants told the therapist at some point during a session “I feel good.” This begs the question: what does it mean to “feel good?” It was difficult for participants to elaborate on this feeling because it is often difficult to verbally expressive nonverbal behavior. One can only speculate the experience felt by dance/movement therapy participants. Past literature suggests that dance/movement therapy generates vitality, “a positive quality of aliveness” and vitalization as “investing people with the power to live” (Schmais, 1985, as cited in Goodill, 2006, p. 53). Dance/movement therapy research by Erhardt and colleagues (1989) deduced that clients who participated in group dance/movement therapy valued vitalization because it counteracted the “sedentary patterns of their lives” (as cited in Goodill, 2006, p. 53). A sedentary lifestyle often affords the demands of inpatient cancer treatment, but research suggests that this inactivity decreases vitalization, which dance/movement therapy can regenerate. Perhaps also the sense of feeling good distracts one from feeling sick; the simple act of motion cognitively and somatically contests the idea that one is dying but rather living.

Relaxation. The relaxation cluster had the highest frequency of corresponding phrases. This is because the principal investigator included all phrases pertaining to breath in the cluster as well, which accounted for nearly half of the 42 incidences. Breathing interventions led to a relaxed mind and body. In a previous study by Mannheim & Weis (2006) cancer inpatients who

participated in seven group dance/movement therapy sessions recorded their expectations of dance therapy. The most important issue to patients was “to seek active relaxation, the desire for inner peace and equilibrium” (p. 65). Relaxation exercises in dance/movement therapy sessions in comparison to mind/body interventions allow for more creativity. The dance/movement therapy intern worked with the patient to find his or her individualized way of achieving a relaxed mind and body in a relationship-focused and client-centered manner.

Quantitative and Qualitative Data Comparison

The similarity that arose in both types of data collection related to physical quality of life is interesting. Participants in the intervention group saw a greatest increase in scores from the physical quality of life subscale, and there were four clusters related to physical quality of life (Motivation to Stay Healthy, Physical Quality of Life, Obstacles to Movement Therapy, and Fear and Safety). Previous dance/movement therapy studies also demonstrated an improvement in participants’ physical well being (Dibbell-Hope, 2000; Lacour, 2006; Manheim & Weis, 2006; Molinaro et al., 1986; Sandel et al., 2005). Dance/movement therapy theory purports that changes in the body results in changes in the mind and vice versa (Goodill, 2005). Although this link was not demonstrated in the quantitative data, the qualitative data supports the idea that physical changes in blood cancer patients had a stronger link to symptoms of anxiety than depression. A comparison of frequencies for phrases regarding anxiety and depression shows over twice as many references to anxiety than to depression. Also, results from quantitative data reveals that intervention group members saw a decrease in their anxiety level, but not in their depression score. There was a small difference mean pre test score of intervention group members for anxiety and depression ($m=6$ and $m=4.6$, respectively). Perhaps participant’s symptoms of depression were not adequately addressed in dance/movement therapy sessions.

Limitations to This Study

There are a few limitations to this study that are worth mentioning should a future dance/movement therapy study be designed in the future for a cancer population. The low number of participants limited the amount of quantitative data that would otherwise be used to determine if dance/movement therapy had significant effect on the measured outcomes. A number of factors contributed to the challenge of enrolling participants, such as the patients' level of physical functioning, their length of stay at the hospital, and their willingness to try dance/movement therapy. While the patients' level of functioning and their length of stay cannot be controlled by the researcher, the more educated the site is about dance/movement therapy the more likely patients will be encouraged to participate. In addition to this, the longer a study proceeds the more participants can be enrolled. The principal investigator was able to be on-site three days a week for nine weeks. The principal investigator's time availability likely limited study participation. Within this time frame the principal investigator collected data from fourteen participants, however six of these participants either did not complete or only partially completed the post test before discharge. There was no means to collect the post test from participants after they left the hospital. In the principal investigator's four-day absence some participants were discharged before completing the post test. Patients had to complete an exhaustive number of assessments and paperwork before being allowed to leave the hospital. It was at times difficult to fit in a 30-minute survey within a battery of paperwork.

When formulating a quasi-experimental protocol within a medical setting, communication with medical staff is key. The principal investigator directed two in-services for the nurses on the unit, but she was still uninformed of some participants' impending discharge. It is therefore recommended that future dance/movement therapy researchers designing a similar

study as this be available on-site for five days a week. The more time the dance/movement therapist spends on-site, the more participation he or she will accumulate. More presence on-site will also likely strengthen the role of the dance/movement therapist within the culture of the hospital. The dance/movement therapist can then have more sessions with patients and gradually build the therapeutic relationship from formulaic physical exercise to more subjective, autonomous, and deepened psychological experiences. This gradual process will also counteract patients' feelings that they have lost control. In time, with the assistance of dance/movement therapy, they can direct the session and regain an internal locus of control.

Because the principal investigator chose to introduce participants to dance/movement therapy primarily with simple physical exercises and mind/body interventions, this limited the patients' responses in regards to the examined psychological outcomes (quality of life, anxiety and depression, and coping). Participants, in general, acknowledged the physical benefits of dance/movement therapy during cancer treatment but not the psychosocial benefits. Finally, because support and referral from a physician greatly increases the chance of participation, the doctors' lack of education regarding dance/movement therapy limited patient participation in this study. One patient declined to participate without direct approval from his physician.

Implications for Future Research

This study intended to use statistical analysis methods as the primary source of support for the practice of dance/movement therapy in inpatient hematological cancer treatment; however, the low enrollment prevented using tests for statistical significance. This study design can be replicated and hopefully a full-time dance/movement therapist could enroll at least 40 participants over a period of approximately one year to accumulate a more accurate numerical representation of the participants' experiences during the intervention period.

All of the surveys used in this study have been distributed to cancer patients in previous research studies (Mannheim & Weis, 2006; Sandel et al., 2005; Urcuyo, Boyers, Carver & Antoni, 2005). There are a vast number of studies that address the quality of life of cancer patients. Findings from the qualitative data analysis from this study suggest that other psychological domains are important to cancer patients during inpatient treatment, in particular fear and safety. Perhaps a new standardized survey or inventory could be developed that measures patients' fears about cancer. Knowing patients' fears would have significant value to therapists, nurses, and doctors treating the patient in the hospital.

In addition, the themes that arose in sequential analysis of dance/movement therapy sessions' content can give future dance/movement therapists ideas of how to work with this population and even design complementary programs for oncology patients. If fear is a paramount issue during inpatient treatment, then dance/movement therapists should continue to explore how to help patients feel safe within their own bodies. However, first the dance/movement therapy field must continue to find ways to persuade patients to agree to accepting services. Goodill (2005) recommended collaborating with other health care professionals to expand dance/movement therapy services to new participants. I believe that educating both patients and professionals is a prerequisite to new collaborative programming. Perhaps a pilot study involving dance/movement therapy with medical professionals could achieve a better understanding of what the practice can offer cancer patients and lead to referrals and endorsements from physicians. Recall that Hardy et al.'s research (2010) found that patients preferred their physicians initiate discussion concerning complementary, alternative, or integrative therapies. With pilot studies and published research, physicians can be more informed about the benefits of medical dance/movement therapy for their patients.

Finally, clarifying the distinction between dance/movement therapy and mind/body medicine may be an important topic in medical dance/movement therapy research. If medical dance/movement therapy thrives within integrative medicine and psycho oncology services, it will need to be distinguished from mind/body interventions so as to prevent the passivity that was observed in participants of this study. Again, education will be integral for both patients and professionals in making the distinction as well as the formation of the therapeutic relationship. Fortunately, in dance/movement therapy when the therapist and patient move together they automatically begin building the therapeutic movement relationship. This relationship may be the driving force that pulls patients out of passivity. Future studies should focus on how to transition cancer patients in treatment from a passive role to an active one.

Summary

This study hypothesized that if hematological cancer patients participated in three or more dance/movement therapy sessions, then they would find a greater quality of life, decreased feelings of anxiety and depression, and an improvement in coping methods. Quantitative and qualitative data were collected to support or refute this hypothesis. Quantitative data was not sufficient to support the hypothesis. Due to the nature of dance/movement therapy, quantitative data alone would not paint an in-depth picture of the efficacy of interventions or the participants' experiences. With the addition of qualitative data, more support for the efficacy of dance/movement therapy was revealed. In terms of coping, intervention group members disclosed utilizing religion/spirituality, social support, and educating oneself as their primary means of coping with cancer. All of the independent variables were determined based upon previous research findings, the principal investigator's experience as a dance/movement therapy intern in a stem cell transplant unit, and the mind/body integration theory behind medical

dance/movement therapy. Pre and post test survey data did not suggest that body based interventions in dance/movement therapy sessions produced enough psychological changes to yield a significant difference in survey measures; however, qualitative data suggests that in sessions, participants could experience a calm mind and body or an invigorated mind and body. With only a few sessions and multiple other factors present in a medical setting, dance/movement therapy could only have a moderate impact on these individuals' psychological functioning. Perhaps a longitudinal study with outpatients would yield more significant results for the mind and body. The research findings suggest that dance/movement therapy would be a good addition to other clinical services provided by psycho-oncology professionals. Dance/movement therapy in this study met the psycho-oncology rehabilitation goals of promoting resources, promoting self-control, and reducing anxiety (Mannheim & Weis, 2006).

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Appendix A

Definition of Terms

Alternative Therapy

Alternative therapy denotes those therapies used as an alternative to conventional cancer treatments, such as taking herbs instead of chemotherapy (Johnson, 2008).

Authentic Movement

Authentic Movement is a Jungian-based intervention sometimes used in the practice of dance/movement therapy. “The underlying purpose of Authentic Movement is to help the mover become aware of, give physical form to and explore and integrate conscious and unconscious feelings about the body and the self” (Dibbell-Hope, 2000, p. 53).

Bartenieff Fundamentals

“Bartenieff Fundamentals is an approach to basic body training that deals with patterning connections in the body according to principles of efficient movement functioning within a context which encourages personal expression and psychophysical involvement” (Hackney, 1998, p. 31).

Complementary Therapy

All other treatments that intend to supplement conventional cancer treatment and/or address psychological adjustment are termed complementary therapies (Holland, 2000).

Coping

Coping is “something people do for a desired outcome” (S. Hobfoll, 2010, personal communication). For this study, coping was examined for the desired outcomes of greater quality of life and less anxiety and depression. There are many ways an individual may cope with cancer, therefore this study focused on the coping subscales included in the Brief COPE inventory (Carver, 1997).

Creative Arts Therapy

A family of art, music, drama, and dance/movement therapies, the creative arts therapies utilize creativity to help individuals process and express emotions (American Cancer Society, 2011).

Experiential Anatomy

Experiential anatomy focuses on body education. “It encourages the individual to

integrate information with experience...[experiential anatomy] provides an underlying awareness of body structure and function” (Olsen, 1998, p. 8).

Hematological Cancer

A hematologic malignancy, or hematological cancer, involves neoplasms in the blood, bone marrow, and lymphatic tissue. Forms of hematological cancer are the leukemias, lymphomas, multiple myeloma, and myelodysplastic syndrome (Leukemia & Lymphoma Society, 2011).

Integrative Medicine

A relatively new paradigm within conventional medical care, integrative medicine is the combination of “mainstream medical therapies and complementary and alternative medicine therapies for which there is some high-quality scientific evidence of safety and effectiveness” (National Center for Complementary and Alternative Medicine as cited in Hardy, Stuber, & Hui, 2010, p. 278). According to its originator, integrative medicine selects the best scientifically validated therapies from conventional, alternative, and complementary medicine to provide to patients with a primary medical illness (Lemley, 2011).

Mean Difference Scores

For this study, mean difference scores were calculated to find the average amount of change over time for each outcome variable (quality of life, anxiety and depression, coping scales) within the control group and the intervention group. A mean difference score was calculated by averaging the post test scores for each group and subtracting their respective averaged pre test scores.

Medical Dance/Movement Therapy

A growing subspecialty of dance/movement therapy, medical dance/movement therapy serves patients with a primary medical diagnosis such as cancer, AIDs, and multiple sclerosis (Goodill, 2005). Five foci of medical dance/movement therapy are vitality, coping, self-efficacy, body image of illness, and mood (Goodill, 2005).

Mind Body Interventions

The National Center for Complementary and Alternative Medicine define mind body interventions as “a variety of techniques designed to enhance the mind’s capacity to affect bodily function and symptoms” (Carlson & Butz, 2008, p.127).

Patterns of Total Body Connectivity

First developed by Irmgard Bartenieff and further defined by her contemporary Peggy Hackney, the fundamental patterns of total body connectivity in Bartenieff Fundamentals describe the six ways in which the human body is connected: through breath, core-distal connectivity, head-tail connectivity, upper-lower connectivity, body-half connectivity, and cross-lateral connectivity (Hackney, 1998).

Quality of Life

For this study quality of life was operationalized as “what makes life worth living” (Whitehouse & Slevin, 1996, p. 201). The Functional Assessment of Cancer Therapy- General (Cella et al., 1993) was used in this study to measure four domains of what makes life worth living: functional well-being, emotional well-being, functional well-being and social well-being.

Stem Cell Transplant

Hematopoietic stem cell transplantation involves the intravenous infusion of autologous or allogeneic stem cells collected from bone marrow or peripheral blood to reestablish [blood cell] function in patients with damaged or defective bone marrow” (Samavedi & Sacher, 2010, para 1). A stem cell transplant as a treatment for hematological cancer is intended to cure the cancer (Holland, 2000).

The Lebed Method

Now advertised as Healthy Steps, The Lebed Method is a therapeutic exercise and movement program offered internationally and catered to individuals with chronic illness. The program goals are to improve overall wellness, range-of-motion, balance, strength and endurance, as well as emotional well-being and self-image (Healthy-Steps Inc., 2011).

Appendix B

Script 1: Description of the Study

Hello, my name is Megan. I'm a movement therapy intern here at NAME OF HOSPITAL, and I'm doing some research here for my master's thesis. Basically, I'm looking at the effects of dance/movement therapy on anxiety, depression, quality of life, and coping. You don't necessarily have to participate in dance/movement therapy in order to be involved in the study. All I would ask you to do is to read and sign a consent form, and fill out three surveys today, each of them about 5 minutes in length. If need be, I can read those forms to you. Then shortly before you're discharged from the hospital, I would ask you to fill out another set of 3 surveys. I am here three days a week offering dance/movement therapy to those who are interested, but as I said, you do not have to participate in order to be part of the research. Would you be interested in participating in the study?

Appendix C

Script B: Consent Process

Here is the consent form. It explains the study in the first three pages. You'll want to read over this form and ask any questions you have. If after reading this you decide to participate in the study, sign on the bottom of the first page. The fourth page regarding HIPAA Authorization basically tells you that I have access to your electronic medical records. There is no other person involved in this study that has access to your medical records. I will also need your signature on this form to enroll you in the study. Once you have signed these documents, I will make a copy of them for your records, and I will leave you with the first packet of surveys and return in about 30 minutes to pick them up.

Appendix D

Principal Investigator: Megan Hall

Contact Information (email, telephone): Megan.Hall@loop.colum.edu, (XXX) XXX-XXXX

Title of Study: Dance/Movement Therapy in Inpatient Hematological Cancer Treatment

Subject Information Sheet and Consent Document

Introduction

This form provides you with information so you can understand the possible risks and benefits of participating in this study; so that you can decide whether or not you want to be a part of this research study. Before deciding whether to participate in this study, you should read the information provided on this document and ask questions regarding this study. Once the study has been explained and you have had all your questions answered to your satisfaction, you will be asked to sign this form if you wish to participate.

Why are you invited to participate in this study?

You are being asked to take part in this study because you are receiving inpatient treatment for a cancer of the blood cells, and have the opportunity to participate in movement therapy during your stay.

Research studies include only people who choose to take part. Remember that your participation is completely voluntary. There is no penalty if you decide not to take part in this study or decide later that you want to stop participating in this research study. Your care at NAME OF HOSPITAL will not be affected if you decide not to participate.

What is the purpose of this study?

The purpose of this study is to look at how dance/movement therapy affects patients with Leukemia, Lymphoma, or Multiple Myeloma while they are receiving treatment in the hospital. Is dance/movement therapy helpful? How is it helpful? The researcher hopes to answer these questions.

How many people are expected to take part in the study?

Approximately 40 people are expected to enroll in this study at NAME OF HOSPITAL within the Bone Marrow Transplant Unit.

What will you be asked to do?

Upon your consent to enroll in the study you will be asked to complete a packet of three surveys at the beginning and end of your hospitalization. These surveys include the Hospital Anxiety and Depression Scale, the Functional Assessment of Cancer Therapy, and the Brief COPE inventory. Questions on these surveys ask you about your thoughts, emotions, and actions related to having cancer. If you are not comfortable answering any of the questions on the

survey, feel free to leave the item blank. Each survey will take approximately 5 to 10 minutes of your time to complete. During your stay at the hospital, you will be invited to participate in movement therapy sessions with the investigator three times per week. Each session ranges from 20 minutes to 1 hour, depending on your comfort level. Movement therapy is a body-based form of therapy intended to integrate the mind, body, and spirit. It involves gentle stretching, relaxation techniques, body awareness, and/or meditation. There is no pre-determined plan for the movement therapy sessions. Each session is tailored to your individual needs. If you have any questions about movement therapy, please do not hesitate to ask the facilitator. Participation in movement therapy is not required to be part of the study. You may attend as much or as little as you wish.

How long will you be in the study?

You will be in the study from the moment you give informed consent by signing this form until you complete the final survey just before discharge. If for some reason the investigator does not receive your completed surveys, then the investigator will simply not use your data in the final research. You may withdraw from the study at any time without any sort of penalty. You may be removed from this study without your consent if you become too ill to complete the final survey or if the study is cancelled.

What are the possible risks of the study?

The possible risks of this study, should you choose to participate in movement therapy, are no more than those associated with a mild, low-impact exercise class. If you are experiencing any physical or emotional discomfort when you decide to participate in a movement therapy session, please inform the movement therapy facilitator so that she can form her interventions to keep you as comfortable as possible. You may choose to remain in bed and engage in relaxation techniques if this type of intervention would be more appropriate for you. Again, your participation in all aspects of the study is completely voluntary.

Are there benefits to taking part in the study?

There may be no direct benefit to you for participating in this study. However, the results of this study may help medical professionals to determine whether it would be good to provide movement therapy services to patients with cancer.

What other options are there?

If you choose not to participate in the study, you may still participate in movement therapy sessions during your stay on this unit.

What about confidentiality of your information?

Records of participation in this research study will be maintained and kept confidential as required by law. The surveys will not include your name but instead a code number. Only the investigator will have access to the survey information, and these surveys will be stored in a secure, locked location.

In order to conduct the study, the principal investigator will use and share personal health information about you. This includes information already in your medical record, as well as

information created or collected during the study. Examples of the information that may be shared include your medical history, physical exam and laboratory test results. The principal investigator will use this information about you to complete this research.

Confidentiality and disclosure of your personal information is further described in the attachment to this form. The attachment is entitled HIPAA Authorization to Share Personal Health Information in Research (2 pages).

Your identity will not be revealed on any report, publication, or at scientific meetings.

The NAME OF HOSPITAL Institutional Review Board (IRB) will have access to your files as they pertain to this research study. The IRB is a special committee that reviews human research to check that the rules and regulations are followed.

What are the costs of your participation in this study?

All costs that are part of your usual medical care will be charged to you or your insurance company. There is no cost for participating in this particular study. Movement therapy is a free service at NAME OF HOSPITAL because the researcher is a volunteer intern. There is no compensation provided for participating in this study.

What happens if you experience a research related injury?

If you experience any injury or illness as a direct result of your participation in this research study, immediate treatment will be provided. However, the cost of that treatment will be billed to you or your insurance company. Your insurance company may not pay.

NAME OF HOSPITAL has no program for financial compensation or other forms of compensation for injuries which you may incur as a result of participation in this study.

Whom do you call if you have questions or problems?

Questions are encouraged. If there are any questions about this research study or if you experience a research related injury, please contact: Megan Hall, (XXX) XXX-XXXX. Questions about the rights of research subjects may be addressed to the NAME OF HOSPITAL Research & Clinical Trials Administration Office at PHONE NUMBER OF HOSPITAL.

By signing below, you are consenting to participate in this research study. You have read the information given or someone has read it to you. You have had the opportunity to ask questions, which have been answered satisfactorily to you by the study personnel. You do not waive any of your legal rights by signing this consent document. You will be given a copy of the signed and dated consent document for your records.

SIGNATURE BY THE SUBJECT

Name of Subject

Signature of Subject

Date of Signature

SIGNATURE BY THE INVESTIGATOR/INDIVIDUAL OBTAINING CONSENT:

I attest that all the elements of informed consent described in this document have been discussed fully in non-technical terms with the subject. I further attest that all questions asked by the subject were answered to the best of my knowledge.

Signature of Individual Obtaining Consent

Date of Signature

Signature of the Principal Investigator

Date of Signature

AUTHORIZATION TO SHARE PERSONAL HEALTH INFORMATION IN RESEARCH

Name of the Research Study: *Dance/Movement Therapy In Inpatient Hematological Cancer Treatment*

Name of the person in charge of the Study: *Megan Hall*

The word “you” means both the person who takes part in the research, and the person who gives permission to be in the research. This form and the attached research consent form need to be kept together.

We are asking you to take part in the research described in the attached consent form. To do this research, we need to collect health information that identifies you. We may collect the results of tests, questionnaires and interviews. We may also collect information from your medical record. We will only collect information that is needed for the research. This information is described in the attached consent form. For you to be in this research, we need your permission to collect and share this information. We will protect the information and keep it confidential.

We will share your health information with people at the hospital who help with the research. We may share your information with other researchers outside of the hospital. We may also share your information with people outside of the hospital who are in charge of the research, pay for or work with us on the research. Some of these people make sure we do the research properly. The “**confidentiality**” section of this form (below) says who these people are. Some of these people may share your health information with someone else. If they do, the same laws that this hospital must obey may not protect your health information.

If you sign this form, we will collect your health information until the end of the research. We may collect some information from your medical records even after your direct participation in the research project ends. We will keep all the information forever, in case we need to look at it again for this research study. If you sign this form, we may continue to share the health information collected for this study with the people listed below, without any time limit. This authorization has no ending date.

Your information may also be useful for other studies. We can only use your information again if a special committee in the hospital gives us permission. This committee may ask us to talk to you again before doing the research. But the committee may also let us do the research without talking to you again if we keep your health information private.

Some studies ask you to accept one of several drugs or treatments, without knowing exactly which one you are being given (a “blinded” study). If you ask to see your health records during a “blinded” study, and if the researcher does not want to let you know which drug or treatment you are being given at that point in the study, the researcher has filled in answers to the following two questions. If this is not a “blinded” study, this paragraph and the following two questions will be crossed out. We cannot do the research if you do not agree to let the researcher hold back this information until the week or date listed below.

What blinded drugs or treatments are offered? **Not applicable** When (in weeks from the start of the study, or as a date) will you be told about the specific drug or treatment that you were given? **Not applicable** You do not have to sign this form. If you decide to NOT sign this form, you cannot be in the research study. We cannot do the research if we cannot collect, use and share your health information.

If you sign this form, you are giving us permission to collect, use, and share your health information. You need to sign this form and the attached consent form (both forms) if you want to be in the research study.

If you change your mind later and do not want us to collect or share your health information, you need to send a letter to the researcher listed above. The letter needs to say that you have changed your mind and do not want the researcher to collect and share your health information. If we cannot collect and share your health information, we may decide that you cannot continue to be part of the study. We may still use the information we have already collected. We need to know what happens to everyone who starts a research study, not just those people who stay in it.

CONFIDENTIALITY

We may share your information with other researchers outside of the hospital. We may also share your information with people outside of the hospital who are in charge of the research, pay for, or work with us on the research. Some of these people make sure we do the research properly. For this study, we will share information with no one outside of NAME OF HOSPITAL .

Any questions? Please ask the researcher or his/her staff. Their phone numbers appear in the attached consent form. You can also call PHONE NUMBER OF HOSPITAL at NAME OF HOSPITAL with general questions about your rights and the research use of your health information. The researcher will give you a signed copy of this form.

SIGNATURE, DATE, AND IDENTITY OF PERSON SIGNING

The health information about _____ can be collected and used by the researchers and staff for the research study described in this form and the attached consent form.

Signature: _____

Date: _____

Print name: _____

Legal authority: _____

Appendix E

Functional Assessment of Cancer Therapy- General

Below is a list of statements that other people with your illness have said are important. Please circle or mark one number per line to indicate your response as it applies to the past 7 days.

<u>PHYSICAL WELL-BEING</u>		Not at all	A little bit	Some- what	Quite a bit	Very much
GP1	I have a lack of energy.....	0	1	2	3	4
GP2	I have nausea	0	1	2	3	4
GP3	Because of my physical condition, I have trouble meeting the needs of my family	0	1	2	3	4
GP4	I have pain	0	1	2	3	4
GP5	I am bothered by side effects of treatment	0	1	2	3	4
GP6	I feel ill	0	1	2	3	4
GP7	I am forced to spend time in bed	0	1	2	3	4

<u>SOCIAL/FAMILY WELL-BEING</u>		Not at all	A little bit	Some- what	Quite a bit	Very much
GS1	I feel close to my friends	0	1	2	3	4
GS2	I get emotional support from my family	0	1	2	3	4
GS3	I get support from my friends.....	0	1	2	3	4
GS4	My family has accepted my illness	0	1	2	3	4
GS5	I am satisfied with family communication about my illness.....	0	1	2	3	4
GS6	I feel close to my partner (or the person who is my main support)	0	1	2	3	4
Q1	<i>Regardless of your current level of sexual activity, please answer the following question. If you prefer not to answer it, please mark this box and go to the next section.</i>					
GS7	I am satisfied with my sex life.....	0	1	2	3	4

<u>EMOTIONAL WELL-BEING</u>		Not at all	A little bit	Some- what	Quite a bit	Very much
GE1	I feel sad	0	1	2	3	4
GE2	I am satisfied with how I am coping with my illness.....	0	1	2	3	4
GE3	I am losing hope in the fight against my illness.....	0	1	2	3	4
GE4	I feel nervous	0	1	2	3	4
GE5	I worry about dying	0	1	2	3	4
GE6	I worry that my condition will get worse	0	1	2	3	4

<u>FUNCTIONAL WELL-BEING</u>		Not at all	A little bit	Some- what	Quite a bit	Very much
GF1	I am able to work (include work at home)	0	1	2	3	4
GF2	My work (include work at home) is fulfilling.....	0	1	2	3	4
GF3	I am able to enjoy life.....	0	1	2	3	4
GF4	I have accepted my illness.....	0	1	2	3	4
GF5	I am sleeping well.....	0	1	2	3	4
GF6	I am enjoying the things I usually do for fun.....	0	1	2	3	4
GF7	I am content with the quality of my life	0	1	2	3	4

Appendix F

Hospital Anxiety and Depression Scale

Read each item and circle the reply which comes closest to how you have been feeling in the past **WEEK**.

Don't take too long over your replies; your immediate reaction to each item will probably be more accurate than a long thought out response.

1. I feel tense or wound up
 - Most of the time
 - A lot of the time
 - From time to time, occasionally
 - Not at all
2. I still enjoy the things I used to enjoy
 - Definitely as much
 - Not quite so much
 - Only a little
 - Hardly at all
3. I get a sort of frightened feeling as if something awful is about to happen
 - Very definitely and quite badly
 - Yes, but not too badly
 - A little, but it doesn't worry me
 - Not at all
4. I can laugh and see the funny side of things
 - As much as I always could
 - Not quite so much now
 - Definitely not so much now
 - Not at all
5. Worrying thoughts go through my mind
 - A great deal of the time
 - A lot of the time
 - From time to time but not too often
 - Only occasionally
6. I feel cheerful
 - Not at all
 - Not often
 - Sometimes
 - Most of the time

7. I can sit at ease and feel relaxed
Definitely
Usually
Not often
Not at all
8. I feel as if I am slowed down
Nearly all the time
Very often
Sometimes
Not at all
9. I get a sort of frightened feeling like the “butterflies” in the stomach
Not at all
Occasionally
Quite often
Very often
10. I have lost interest in my appearance
Definitely
I don’t take so much care as I should
I may not take quite as much care
I take just as much care as ever
11. I feel restless as if I have to be on the move
Very much indeed
Quite a lot
Not very much
Not at all
12. I look forward with enjoyment to things
As much as ever I did
Rather less than I used to
Definitely less than I used to
Hardly at all
13. I get sudden feelings of panic
Very often indeed
Quite often
Not very often
Not at all
14. I can enjoy a good book or radio or TV program
Often
Sometimes
Not often
Very seldom

Appendix G

Brief COPE

Instructions:

The following items deal with ways you've been coping with cancer. These items ask what you've been doing to cope with your illness. Each item says something about a particular way of coping. Please indicate how much or how frequently you've been doing what the item says *since you were first diagnosed*. Use these response choices and **circle** the number that is most true for you.

1 = I haven't been doing this at all

2 = I've been doing this a little bit

3 = I've been doing this a medium amount

4 = I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.

1 = not at all

2 = a little bit

3 = a medium amount

4 = a lot

2. I've been concentrating my efforts on doing something about the situation I'm in.

1 = not at all

2 = a little bit

3 = a medium amount

4 = a lot

3. I've been saying to myself "this isn't real."

1 = not at all

2 = a little bit

3 = a medium amount

4 = a lot

4. I've been using alcohol or other drugs to make myself feel better.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

5. I've been getting emotional support from others.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

6. I've been giving up trying to deal with it.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

7. I've been taking action to try to make the situation better.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

8. I've been refusing to believe that it has happened.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

9. I've been saying things to let my unpleasant feelings escape.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

10. I've been getting help and advice from other people.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

11. I've been using alcohol or other drugs to help me get through it.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

12. I've been trying to see it in a different light, to make it seem more positive.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

13. I've been criticizing myself.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

14. I've been trying to come up with a strategy about what to do.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

15. I've been getting comfort and understanding from someone.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

16. I've been giving up the attempt to cope.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

17. I've been looking for something good in what is happening.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

18. I've been making jokes about it.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

19. I've been doing something to think about it less, such as watching movies/TV, reading, daydreaming, or sleeping.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

20. I've been accepting the reality of the fact that it has happened.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

21. I've been expressing my negative feelings.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

22. I've been trying to find comfort in my religion or spiritual beliefs.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

23. I've been trying to get advice or help from other people about what to do.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

24. I've been learning to live with it.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

25. I've been thinking hard about what steps to take.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

26. I've been blaming myself for things that happened.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

27. I've been praying or meditating.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

28. I've been making fun of the situation.

1 = not at all 2 = a little bit 3 = a medium amount 4 = a lot

Appendix H

Researcher Journal Entry

Code # : _____

Date: _____

Session #, length: _____

Data/Observations: *(include Diagnosis, history, upcoming procedures, patient stories)*

Intervention(s): *(What did you do as the therapist?)*

Response: *(How did the patient respond to the intervention(s)? Did it help their coping?)*

Appendix I

Sequential Analysis Steps 1 through 6

Step 1: Key Terms	Step 2: Restate key term	Step 3: Form clusters	Step 4: Cluster labels	Step 5: Generalizations	Step 6: Minitheories
Pt walks 33 laps in the hallway everyday	Maintain activity and mobility	Motivated to stay active Maintain activity and mobility Recognizing benefit of therapy Desire to be active Hoping for achievement	Motivation for Staying Healthy	Some patients want to stay active and mobile while in the hospital. Some patients try to stay motivated to be physically healthy by walking the hallways or participating in dance/movement therapy. Motivation for staying healthy comes from both intrinsic and extrinsic sources.	Patients who are motivated to stay physically healthy are more likely to participate in dance/movement therapy than those who are not.
Pt unable to do anything with his right hand	Physical limitation	Sedentary lifestyle in the hospital back pain physical limitations physiological complaints accommodate for nausea routine	Physical Quality of Life	Some participants had physical limitations and fatigue that were considered in the formation of movement interventions. Patients are generally more sedentary in the hospital than in their daily lives.	Physical limitations such as pain, nausea, fatigue, and past injuries are important to consider in the formation of dance/movement therapy interventions.

		movement		Some patients experienced pain and nausea that deterred them from moving.	
“My friends have flaked out”	Lack of social support	Family support Social interaction Lack of social support	Social Quality of Life	Patients seek social support to cope with their illness.	Social support is a means of coping with cancer
Pt said a prayer for health	Prayer for health	Belief in God helps coping process Prayer for health Connecting to spirituality	Spiritual Coping	Patients look to religion and spirituality to cope with their illness, such as prayer and faith in God.	Religion and spirituality are a means of coping with cancer.
Read info about the procedure	Self-education	Self-education Cancer is an educational opportunity Education of efficient movement Learning to live with less control	Educational Opportunities in Treatment	Patients educate themselves about cancer treatment, such as the transplant process, medical procedures, side effects of treatment, and nutrition. Participants used dance/movement therapy as a means to learn about their bodies and efficient movement.	Dance/movement therapy can be used to educate patients, which assists in coping with medical illness.
“What are we doing today?”	Resisting leadership	Wanting to be the student Resisting	Participant Passivity	Participants in dance/movement therapy looked for guidance	Patients assumed a passive role in most dance/movement

		leadership		from the therapist in movement interventions.	therapy sessions.
		No response			
		Putting responsibility on the therapist		During most dance/movement therapy sessions, the therapist	
		Briefly followed instructions		gave movement directives and the participant followed the	
		Looking for direction from the therapist		movements of the therapist.	
		Passive weight		The therapist encouraged patients to lead movement, but most did not feel efficacious to do so.	
				Participants had difficulty developing personal goals for movement therapy.	
“I don’t think I can do that”	Low self-efficacy	Disruptions	Obstacles in Dance/Movement Therapy	Some participants in the intervention group reported body consciousness and self-deprecating statements about their bodies.	Patients experienced difficulties in dance/movement therapy sessions related to body consciousness, a lack of mindfulness, misunderstanding movement directives, and disruptions.
		Misunderstanding the body			
		Low self-efficacy			
		Shame for lack of endurance			
		Self-deprecating statements		A lack of groundedness and mindfulness during	

		Body consciousness		movement interventions was present in a few participants.	
		Not engaged in the movement		Misunderstanding of movement interventions led to difficulty performing them.	
		Consistent medical complications		There were a number of disruptions during movement therapy sessions, such as visits from medical professionals, nurses checking vital signs, phone calls, and nausea.	
Pt did not care what we did in the session	apathy	Tearful emotions	Depression	Some participants displayed symptoms of depression such as anhedonia and tearful emotions.	Some patients experienced depression while receiving treatment for a blood cancer diagnosis.
		Apathy			
		Demoralized			
		Seeking pity for physical condition		Facing mortality and idleness while in the hospital contributed to depressed mood.	
		Bored			
"If I fall, I'm dead."	Concern for physical safety	Scared	Fear and Safety	Some participants had fears and concerns about their physical safety which was taken into	Dance/movement therapy supported personal safety, as patients have multiple fears about their bodies.
		Concern for physical safety			
		Fear of re-injury			

		Preparedness		consideration in the formation of movement interventions.	
		Family concern about exceeding physical limits		Fear for personal safety stemmed from a general feeling of fragility as a cancer patient, lack of endurance, physical limitations, and fear of reinjuring a previous injury.	
		Injury prevention			
		Avoidance of pain and discomfort			
		Knowledge of endurance			
				Patient's self awareness of their physical limitations helped them to feel safe, which was encouraged and supported in dance/movement therapy.	
Pt expressed feeling overwhelmed	overwhelmed	Expressed feeling tension	Anxiety	Participants displayed symptoms of anxiety such as trouble sleeping, tension, stress, frequent clock checking, anticipation, and feeling overwhelmed.	Anxiety is manifested in the body and is observable in dance/movement therapy sessions
		Overwhelmed			
		Restlessness			
		Anticipating next activity			
		Frequent clock checking			
		Trouble		Symptoms of anxiety appeared in	

		sleeping		dance/movement therapy sessions via shoulder tension, strained movement, bound flow, and physical discomfort.	
"I feel good"	Feeling good	Certain movements feel good Movements symbolic of feeling good Feeling good	Feeling Good	Multiple participants reported "feeling good" in dance/movement therapy sessions	Dance/movement therapy sessions created a sense of "feeling good" in participants.
Movement blocks out stressful thoughts	Movement alleviates stress	Movement alleviates stress Figuring out how to relax Tension release Feeling relaxed Free flow Self-massage Eyes closed	Relaxation	Most dance/movement therapy sessions incorporated relaxation techniques. Music, closing of the eyes, breath, grounding, self-touch, and tension release exercises aided feelings of relaxation in participants. A relaxed mind and body resulted in more free flow in participants.	Relaxation interventions were an important part of many dance/movement therapy sessions.