

**A Dance/Movement Therapy Clinical Model for Women with Gynecologic Cancer
Undergoing High Dose Rate Brachytherapy: A Literature-Based Study**

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Dedications

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Abstract

A Dance/Movement Therapy Clinical Model for Women with Gynecologic Cancer Undergoing High Dose Rate Brachytherapy: A Literature-Based Study

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The diagnosis of gynecologic cancer not only has obvious physical ramifications for the patient, but also produces secondary psychological stressors that negatively impact the patient's quality of life. These secondary stressors may include altered self-image, sense of isolation or of betrayal by one's body, anxiety, depression, and complications related to sexuality. Additionally, these stressors may be persistent even ten years post diagnosis. Dance/movement therapy (DMT) has been shown to directly address these issues through a holistic approach to healing the mind-body connection to contribute to a patient's abilities to cope with, and potentially, alter the progress of their illness. However, there are no published studies to date showing the utility of DMT as a psychosocial support intervention specifically with gynecologic cancer patients. The present literature-based research study collates results from various studies, in a matrix model format, to demonstrate the potential efficacy of DMT as it could be applied to patients with gynecologic cancer being treated with high dose rate (HDR) brachytherapy, which presents the patient unique challenges both psychological and physical. A ten-week clinical model is designed for an intervention program to be initiated upon diagnosis and continued through the treatment. It combines elements from established DMT practices to specifically address psychological and psychosocial issues relevant to the targeted patient population.

CHAPTER 1: INTRODUCTION

According to the estimates of the American Cancer Society (ACS), approximately 77,250 new cases of gynecologic cancer will have emerged in 2006 in the United States; roughly 28,060 of these women will not have survived the disease (ACS, 2006b). A diagnosis of cancer not only has obvious physical ramifications for the patient, but the trauma of a diagnosis produces psychological stress as well (Fawzy, 1999; Serlin, Classen, Frances, & Angell, 2000). A traumatic life experience, such as the diagnosis of a life-threatening illness, forces an individual to alter future plans (Fawzy & Fawzy, 1997). Having to reframe the future may result in anxiety, depression, confusion, and hopelessness. In addition, the physical side effects of illness and medical treatments, such as fatigue and acute pain, may further distort the psychological state of the patient through body image, body awareness, and self-esteem (Ashing-Giwa, Kagawa-Singer, Padilla, Tejero, Hsaio, Chhabra, et al., 2004; Cohen & Walco, 1999; Dibbell-Hope, 2000; Fawzy, 1999). A medical diagnosis can cause a disruption in an individual's mind and body connection, perhaps in response to feelings that the body has betrayed the owner.

Dance/movement therapy (DMT), a creative arts therapy, is a supportive and holistic psychotherapeutic service to patients with medical illnesses and related psychological stress. Dance/movement therapy employs the integrated mind/body dynamic through the use of guided improvisational movement experiences, creative expression, and integration of relaxation techniques to facilitate communication and expressive work. There is evidence that DMT and other creative mind/body methods empower individuals to express needs and feelings on both verbal and non-verbal levels by helping people reconnect with the body as an instrument of expression (Achterberg,

Dossey, Gordon, Hegedus, Hermann, & Nelson, 1992; Dibbell-Hope, 2000; Goodill, 2005; Lippin & Micozzi, 2006; Serlin et al., 2000). Having an alternative outlet for expression is especially useful when it may be difficult for patients to verbalize strongly felt experiences, as often occurs during treatment for life-threatening illnesses such as cancer. Furthermore, DMT has been found to be effective in alleviating negative emotional and physical side effects for oncology patients (Cohen & Walco, 1999; Dibbell-Hope, 2000; Goodill, 2005; Sandel, Judge, Landry, Faria, Ouellette, & Majczak, 2005; Serlin et al., 2000).

Within the development of a large literature in psychooncology, the experience of women undergoing a particular category of radiation therapy for gynecologic cancers has yet to be sufficiently described and understood. Specifically, high dose rate (HDR) brachytherapy is a particularly challenging treatment experience. HDR brachytherapy consists of a radiation source being inserted into the vaginal canal and placed directly against the tumor. The patient is asked to remain in a supine position on her back without movement, isolated in a special chamber, during the procedure. The treatment is invasive and anxiety provoking, and the patient's psychological state can make the procedure exponentially worse, as tightening of the vaginal wall muscles decreases the opening for insertion of the instrument (Mary Dugan-Jordan, personal communication, June 15, 2006).

The purpose of this study was to develop a clinical model for a dance/movement therapy intervention specific to women with gynecologic cancer being treated with high dose rate (HDR) brachytherapy. Through a review of the literature on gynecologic cancer, dance/movement therapy, and the mind-body connection, a ten-week intervention

was created. The literature review is presented in a matrix model format to organize the material into subheadings. Each matrix is summarized with key topics relevant to the current study, and includes the authors and readings for reference. The research was divided into empirical and non-empirical research, within the matrices, to present both qualitative and quantitative information, in addition to comprehensive literature reviews and theories.

The ten-week time frame was chosen specifically to complement the medical treatment plan used for certain types of gynecologic cancer. Typically, the treatment process that includes HDR brachytherapy is approximately four weeks following six weeks of external beam radiation therapy (EBRT). In the context of a DMT based intervention, the aim is to explore relaxing movement techniques, imagery exercises and breathing exercises that can be utilized before, during, and after the procedure. By providing a set of tools for the patient, she may find a way to positively cope with the pending distress of the treatment. In addition, working through spontaneous movement exercises, DMT can provide an outlet for the patient to cope with her new situation (Cohen & Walco, 1999) during and after the treatment plan in a group environment with other gynecologic cancer patients. The DMT group process is a unique approach to group therapy—it is a physically based experience, which can be used with individuals feeling disconnected from their own bodies to increase body awareness and self-image (Ho, 2005). At the same time, the group experience may combat the sense of isolation, lack of universality, and communication issues attendant to the diagnosis of cancer (Fawzy, 1999).

1.1 Background

Currently, DMT research has focused on working with patients after medical treatment (Dibbell-Hope, 2000; Ho, 2005; Sandel et al., 2005; Serlin et al., 2000), while this research is based on the patient's experience during treatment. The techniques introduced in the intervention may help the patient cope with the invasive medical procedure at the time she is experiencing it, as well as in preparation for the follow-up treatments. Furthermore, DMT studies involving cancer patients have been mainly breast cancer patients (Dibbell-Hope, 2000; Ho, 2005; Sandel et al., 2005; Serlin et al., 2000), or adolescents and children with cancer (Cohen & Walco, 1999) rather than women with gynecologic cancer. Medical DMT is a currently a growing practice, and it is critically important to have an additional model for DMT that could be utilized in hospital or medical settings. Any psychosocial intervention that could potentially benefit the patient's experience and increase the medical efficacy of the treatment is necessary to consider as part of a long-term treatment plan (Fawzy, 1999). As noted by Turner and colleagues (2005), the increase in complex issues faced by cancer patients during diagnosis, and even in recovery, calls for a serious evaluation and employment of psychosocial interventions.

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1.2 Psychological Responses of Cancer Patients

The diagnosis of cancer is one life event that strongly forces an individual to reframe their "life trajectory" (Fawzy & Fawzy, 1997, p. 372). Their plans for the future, and current living situation and lifestyle, all need to be reconfigured to take into

consideration possible limitations through the diagnosis, treatment, and recovery. In a study conducted on the impact of cervical cancer on suicidal behavior (Ashing-Giwa et al., 2004), multiple themes emerged and were implicated:

...depression, anxiety about terminal illness and death and dying, emotional stress/distress relating to the diagnosis of cancer, making treatment decisions, undergoing treatment, the perception of being unable to cope, poor social support which could reduce or buffer the negative impact of the disease and act as an external control which can significantly reduce the risk of suicidal behavior, the sociocultural context within which cancer occurs and the nature of significant others' responses and support for patients at risk of suicidal behavior (p. 168-169).

While a patient is experiencing the initial response to a medical diagnosis, all the factors listed above play a role in their reaction and coping mechanism. The treatment team, most likely, will initially focus on the physical adjustments, while the emotional adjustment is left for a later time. However, the psychological and psychosocial effects of a medical diagnosis should be considered in the implementation of interventions in the early stages of the patient's treatment plan. Research has proven the efficacy of psychosocial treatments to the outcomes of a medical diagnosis and treatment (Achterberg et al., 1992; Fobair, 1997a, 1997b; Spiegel, Bloom, Kramer, & Gottheil, 1989; Turner, Zapart, Pedersen, Rankin, Luxford, & Fletcher, 2005).

1.3 Gynecologic Cancer: The Disease and Treatment

Gynecologic cancer is a devastating disease that affects approximately 77,000 women in the United States (ACS, 2006a). Gynecologic cancer may lay dormant for years, and may be prevented via early detection and treatment (ACS, 2006a). Once detected, there are multiple treatment options depending on the stage of cancer. The staging system is based on the size of the tumor, the presence/absence of metastasis and the presence/absence of disease in the lymph nodes (Waggoner, 2003).

The treatment options available include external beam radiation therapy (EBRT), internal radiation therapy (low dose or high dose; also referred to as brachytherapy), chemotherapy, and/or surgery (NIH, 2003). Internal radiation therapy, administered in a high dose rate situation, is typically used in conjunction with chemotherapy and EBRT. Chemotherapy treatments may be received during the radiation treatment (NIH, 2003). Instruments inserted into the vaginal canal administer the HDR brachytherapy treatment. A transfer tube is inserted to meet the site of the tumor, and an attached outside device delivers the radiation. The patient is asked to lie still for a few minutes in an isolated, protective chamber. The initial procedure tends to be the longest, lasting approximately one hour as the treatment plan is created. Following visits are brief, however, the patient may have developed a conditioned anxiety based on their initial experience (Mary Dugan-Jordan, personal communication, September 19, 2006).

The diagnosis of cancer has many resounding psychological effects; however, the diagnosis of gynecologic cancer, similarly to breast cancer, has the additional stress on sexual functioning, body image, body awareness, and the sense of womanhood (Ashing-

Giwa et al., 2004; Klee, Thranov, & Machin, 2000a; Noor-Mahomed, Schlebusch, & Bosch, 2003). The patient may experience early menopause, infertility, and feelings of sexual undesirability (Ashing-Giwa, et al 2004). The adaptation to a new physical self is accentuated by the emotional reframing of the woman's life and future.

1.4 Dance/Movement Therapy in Medical Care

The utilization of DMT within the medical field is progressing more slowly than in the mental health industry. Pivotal studies have been conducted combining psychotherapeutic methods with physical approaches for the treatment of oncology patients (Cohen & Walco, 1999; Dibbell-Hope, 2000; Goodill, 2005; Ho, 2005; Sandel et al., 2005; Serlin et al., 2000). The increase in these types of studies is due to the growing awareness of psychological responses accompanying a cancer diagnosis. These studies have examined the effects of the cancer treatment on levels of anxiety, stress, body image, and body awareness.

Micozzi's text on complementary and alternative medicine describes the underlying goal of DMT as:

...that visible movement can affect total biopsychosocial potential and function, promoting healing and altering mood, reawakening stored feelings and memories, organizing thoughts and actions, reducing isolation, and establishing rapport.

Total body movement stimulates functions of body systems such as circulation, respiration and skeletal and neuromuscular activity, including the use of muscles and joints to reduce body tension and body armoring. Other known clinical effects

are the reduction of chronic pain, depression, and suicidal ideation. (Micozzi, 2006, p. 342)

Multiple studies have been conducted incorporating DMT in various medical environments to promote healing on both a psychological and psychosocial level. Serlin and colleagues (2000) created an existentially-based expressive support group to explore the benefits of DMT for women with breast cancer. In this group, the therapist incorporated movement, relaxation, arts, and imagery. This program did not use scripted imagery exercises, but instead allowed for the movement, imagery, and meditation to develop from the members' stories.

Sandel et al. (2005) conducted another study and investigated the changes in quality of life for breast cancer survivors participating in a DMT group. The authors found significant improvements measured after the completion of the intervention. Dance/movement therapy and guided imagery were also combined in a treatment plan in Ho's (2005) pilot study with Chinese cancer patients in Hong Kong. Guided imagery was used to facilitate relaxation and closure of the session, while dance/movement styles ranged from specific dances to expressive movement. Ho's study identified narratives from the participants illustrating that there were improvements in self-esteem, as well as lower perceived stress scores.

Dibbell-Hope (2000) conducted a study on the use of DMT in increasing the level of psychological adaptation to breast cancer and treatment for female participants. The women in the treatment group identified social support as being the main benefit of the treatment group. DMT can provide an outlet to combat the sense of isolation, the fears of

death and dying, and the negative sense of self that accompany a life threatening diagnosis.

Group process has been found to provide oncology patients with support (Achterberg et al., 1992; Rodgers, 2007; Spiegel et al., 1989), as well as “hope, meaningfulness, some sense of control and affiliation, as well as an avenue to combat the sense of fear and alienation that accompanies the experience of the diagnosis and treatment” (Noor-Mahomed et al., 2003, p. 171). As DMT combines group process with the physical experience, it allows the patient alternative ways of learning to cope with their diagnosis and treatment.

1.5 Mind-Body Connections

“At the beginning of the twenty-first century, the creative arts therapies are firmly established as an important part of complementary medicine for psychologic and physiologic illnesses” (Pratt, 2004, para. 1). The goal of DMT is the holistic integration of emotional, spiritual, and cognitive selves with the environment (Ritter & Low, 1996). Numerous writings on the topic of DMT discuss the link between emotional states and the manifestation within a person’s body organization. For instance, Amighi, Loman, Lewis, and Sossin (1999) discuss the associations of Flow to internal emotions (see Appendix B for definitions). “Bound Flow is associated with feelings of restraint and caution which accompany more specific emotions of anger, fear, anxiety or displeasure” (Amighi et al., 1999, p. 60). The basis of DMT suggests that with this knowledge, a change in the body organization can then lead to a mental shift, and vice versa.

The opposite of Bound Flow is Free Flow, and Amighi et al. (1999) write that Free Flow is responsible for the increase in pleasurable sensations, specifically in regards to physical activities and relaxation. “The mobilization and release of tension is associated with freedom from anxiety and caution...” (Amighi et al., 1999, p. 61). By employing these theories, a dance/movement therapist can work with patients on tension release exercises. The patient can then utilize the relaxation response and Free Flow during a potentially stressful medical procedure. Several studies have analyzed the effects of DMT on anxiety, stress, and depression and have found positive results (Erwin-Grabner, Goodill, Hill, & von Neida, 1999; Dibbell-Hope, 2000; Ho, 2005; Sandel et al., 2005; Serlin et al., 2000). For instance, Brooks and Stark (1989) compared a control group of hospitalized psychiatric clients to a group that did not receive DMT, and found significant decreases in anxiety (Ritter & Low, 1996).

A shift in the mental attitude can have a resounding impact on the patient’s physical self. Research on the placebo response lends additional support to the “powers of the mind” (Achterberg et al., 1992; Rodgers, 2007). It has been found that patients can have an improved physical and emotional reaction based on their perception of their health. A newer mind-body intervention, cognitive restructuring, is based on teaching individuals to replace stress-inducing thoughts and attitudes with health-enhancing mental states. By learning to recognize these negative thoughts, and minimizing the pessimism, an individual can increase their sense of control and optimism (Jacobs, 2001). Building a strong and trusting relationship with their healthcare providers may help patients with gynecologic cancer take more active control over their health. With this sense of empowerment comes improved self-efficacy and coping skills, causing them to

become more involved in their treatment plan and recovery (Goodill, 2005). Therefore, it may be postulated that DMT, initiated early on in the woman's treatment plan, could provide relief from the psychological responses associated with gynecologic cancer. The following literature review outlines additional information to support this theory.

CHAPTER 2: LITERATURE REVIEW

Many writings have been published in regards to the effects of gynecologic cancer on a woman's psychological state. The disease and its treatment cause multiple physical reactions, in turn triggering psychological responses. In the following literature review, studies, articles, and books have been referenced to develop the theory that dance/movement therapy (DMT) would be an appropriate and beneficial option for psychological treatment of female oncology patients. Based on the trauma to the body and the ensuing emotional responses, DMT may provide relief on the emotional, social, cognitive, and physical levels of an individual. The first section is comprised of information pertaining to the types of gynecologic cancers and treatments; the second section is a collection of material on the various psychological responses identified in conjunction with gynecologic cancers; in the third section, DMT is described in regards to the mental health field, its clinical utility, and finally, in the medical field. The fourth and final section is a compilation of mind-body interventions, psychosocial support for cancer patients, and DMT's potential efficacy for this specific population.

2.1 Understanding Gynecologic Cancer and Treatment

Cancer has become one of the leading causes of death, in both men and women, in the United States. According to the American Cancer Society, an estimated 564,830 people in America died from cancer in 2006 (American Cancer Society [ACS], 2006a). Cancer is defined by Webster's Dictionary (1992) as "a malignant neoplasm or tumor, characterized by a morbid proliferation of epithelial cells in various parts of the body, spreading into adjacent tissue, with consequent progressive degeneration which often

ends fatally” (p. 148). Both external and internal factors can contribute to the growth and spread of abnormal cells, such as tobacco use and inherited mutations (ACS, 2006a). The treatments available today for a diagnosis of cancer include chemotherapy, radiation therapy, surgery, hormones, and immunotherapy. Based on the development of technology and the ability to diagnose cancer at earlier stages, some survival rates have increased since the 1970’s. At that time, five-year survival rate was 50%, while from 1995-2001, the five-year survival rate increased to 65% (ACS, 2006a). For early invasive cervical cancer, the five-year survival rate is 92%, and 72% for all stages combined (ACS, 2006a). Despite the statistics, the psychological repercussions accompanying the physical trauma associated with the disease are a prominent element to be factored into the treatment plans for oncology patients.

2.1.1 Types of Gynecologic Cancers

Gynecologic cancers include any cancer of the female genital system: uterine, ovarian, cervical, vulvar, vaginal, and endometrial. Cervical cancer comes second to breast cancer as the leading cause of death in women worldwide. Cox and Ang (2003) report that approximately 500,000 new cases of cervical cancer are diagnosed each year. The American Cancer Society’s figures for US cases of gynecologic cancer for 2006 show that uterine and ovarian accounted for the majority of the 77,250 cases of female cancer diagnosis (ACS, 2006a) [See Appendix A for gynecologic cancer statistics]. Routine screening for gynecologic cancers can prevent premature death in a cancer diagnosis, as earlier stage treatment has higher success rates. It has been found that more deaths occur in lower socioeconomic status populations because the diagnosis typically occurs in later stages when treatments are not as successful (Noor-Mahomed et al., 2003).

In the past few years, pre-cancerous conditions for cervical cancer have been detected more effectively with an increase in Papanicolaou screening, in both White and African American populations (ACS, 2006a). However, there is currently no screening examination for early detection of ovarian cancer. Signs and symptoms for gynecologic cancers vary depending on the specific diagnosis. A swollen abdomen, urinary symptoms, and persistent digestive disturbances may accompany ovarian cancer and call for examination. Abnormal vaginal bleeding may be a sign of cervical cancer, as well as endometrial cancer, both associated with the uterus (ACS, 2006a).

When a gynecologic cancer is diagnosed, a staging system is used to describe the impact of the disease. The stages are based on the following: if the tumor has invaded nearby tissue, if the cancer has spread, and to what parts it has spread. The staging system ranges from 0 to 4, 0 representing the cancer only being in the top layer of the tissue of the affected area, and stage 4 if the cancer has metastasized to other organs (NIH, 2004).

2.1.2 Treatment

The chosen treatment for a diagnosis of gynecologic cancer is dependent on the stage and type of cancer. Treatment options include surgery, radiation therapy, chemotherapy, or a combination of any of these methods. Surgery treats the site of the cancer and any of the areas close to the tumor. In the case of the cervix, a total hysterectomy would remove the cervix and the uterus. For early stage cervical cancer, however, a total hysterectomy may not be necessary (NIH, 2004). In addition, lymph nodes near the site may be surgically removed to determine if the cancer has spread to

other parts of the body. Other surgical options include radical hysterectomies, cryosurgery, or laser surgery.

For the purposes of this research project, internal radiation therapy is the focus of the treatment options. Radiation therapy is used to kill the cells in the treated area. Radiation therapy can be used in conjunction to chemotherapy, alone, or with both chemotherapy and surgery (NIH, 2004). Radiation may be used before surgery to shrink the tumor, thereby decreasing how radical the surgery is, and increasing the success of the surgical procedure in removing the cancerous tissue (NIH, 2003). Two types of radiation therapy are currently used, internal radiation and external radiation. External radiation (EBRT) is an outpatient procedure in which a patient receives high-energy rays directed to the site of the cancer and a small amount of normal tissue surrounding it (NIH, 2003). High-energy radiation is used to treat many types of cancer; the type of cancer and depth of radiation treatment are the determinants. For most gynecologic cancers, a patient will be lying down on a treatment table for the procedure. The patient is asked to remain still during the procedure to insure that the radiation is directed specifically to the treatment area. Placing special shields between the machine and the patient protects normal tissues and organs. The actual time the patient is receiving the radiation is approximately 1 to 5 minutes. For most cancer diagnoses, external radiation is administered for 6 to 7 weeks (NIH, 2003).

Internal radiation, referred to as brachytherapy or implant therapy, is when the source of radiation is placed inside the body at the site of the tumor (Cox & Ang, 2003; NIH, 2003). For instance, in the treatment of cervical cancer, brachytherapy is comprised of a patient receiving high or low dose rates of radiation via an implant inserted into the

vaginal canal and placed against the cervix (Cox & Ang, 2003). Internal therapy allows the healthcare professionals to treat a patient with higher doses of radiation in a shorter timeframe than with external therapy (NIH, 2003). There are three forms of internal radiation therapy: intracavitary, intraluminal, and interstitial. Interstitial radiation consists of the radioactive source being placed in the tumor through catheters, seeds, or capsules. Radioactive sources can also be administered through a small holder placed in or against the tumor, which is called intracavitary. Intraluminal therapy is the use of lumens or tubes placed in the body for the radioactive source to travel to the location of the cancer (NIH, 2003). High dose rate brachytherapy, which may take any of the above named forms, takes only a few minutes, with the exception of the initial procedure, which may last close to an hour. Remote brachytherapy, identified by a computer monitoring the release of a radioactive source through a tube to a catheter near the tumor site, is a brief procedure.

The choice of external therapy treatment and frequency of treatment is dependent on the type of cancer, one's general health, adjuvant treatments, and location of cancer (NIH, 2003). In some cases, the "goal of radiation treatment is the complete destruction of an entire tumor. In other cases, the aim is to shrink a tumor and relieve symptoms" (NCI, 2004, p. 2). Therefore, the procedure choice will be determined by the goals of the treatment.

2.1.3 Side Effects of Radiation Therapy

As with any medical procedure, there is the potential for side effects. With both internal and external radiation, a patient may experience late chronic side effects, or early acute side effects. Acute side effects can occur within a short time after the initial

treatment and usually dissipate a few weeks after treatment. Chronic side effects may not develop until months, even years, after the therapy has been received, and could be permanent (NIH, 2003). Examples of acute side effects are skin irritation, vaginal irritation, sexual changes, frequent urination, possibly accompanied by burning, and/or diarrhea (American Society for Therapeutic Radiology and Oncology, 2005). Fatigue and skin irritations are the most commonly experienced early side effects. The body is being treated with a radioactive source; therefore, the body is spending a lot of energy in its effort to heal. The fatigue could be a result of the stress experienced during the treatment plan, lowered blood counts, lack of sleep, pain, or poor appetite (NIH, 2003). In addition, hair loss, or alopecia, nausea and vomiting are all potential side effects (NIH, 2004).

2.2 Psychological Responses to a Gynecologic Cancer Diagnosis

In recent years, research has shown that various psychological consequences result from a diagnosis of gynecologic cancer (Ashing-Giwa et al., 2004; Juraskova, Butow, Robertson, Sharpe, McLeod, & Hackner, 2003; Klee et al., 2000a; Lutgendorf, Anderson, Ullrich, Johnsen, Buller, Sood, et al., 2002; Noor-Mahomed et al., 2003; Wenzel, Vergote, & Cella, 2003). Klee and colleagues (2000a) presented data on advanced stages of cervical cancer, and noted that the information can be used to “alert the professionals to the fact that some of the patients have not only physical but also psychological and social side effects of the disease and treatment” (p. 10). The data are not only valuable to healthcare professionals, but also essential to the patient’s awareness for the journey ahead of her following diagnosis. As Fawzy and Fawzy’s life trajectory

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model (1997) illustrates, an oncology patient will need to reevaluate her future plans based on the medical diagnosis. The plans for the future “assumptive world” will be altered to include the psychological and physical responses to the cancer and its treatment.

Gynecologic cancer can be particularly distressing for patients, both physically and emotionally, due to the aggressiveness of the surgical and medical treatment administered, treatment-related side effects experienced, fears about disease recurrence or death, and changes in life-style necessitated by the disease (Wenzel et al., 2003).

Wenzel, Vergote and Cella (2003) acknowledge that with the evolving paradigm of cancer management addressing the quality of life in addition to the quantity, supportive care has become a key component in cancer management. A discussion follows of the main psychological consequences found in research on the effects of gynecologic cancer.

2.2.1 Body Image, Self-esteem, and Sexual Functioning

In a qualitative study, Ashing-Giwa and colleagues (2003) researched the effects of cervical cancer for a diverse sample of Caucasian, African American, Latina, and Asian American women. The authors found a common misconception, in certain populations, of cervical cancer as a sexually transmitted disease related to promiscuity, which increased the existing negative psychosocial reactions of the cancer patient. The research found that fear, shock, denial, anxiety, depression, shame, and anger were a result of this misconception (Ashing-Giwa et al., 2003). In turn, the fear and shame

negatively impacted the women's sense of self. Women from each sample expressed concerns about their body image and femininity. Feelings such as being "damaged and worn out after the diagnosis" were common among the African American and Caucasian participants (Ashing-Giwa et al., 2003, p. 717). The treatment effects of infertility, early menopause, and surgical scars increased the distress women felt about themselves. "You grow up thinking you'll have kids. Now you won't. What is my role as a woman, I ask myself? What is different from a man?" (Ashing-Giwa et al., 2003, p. 717).

In addition to a sense of inadequacy, intimate relationships and sexual functioning are affected. Loss of libido and sexual desire make it difficult for a woman to engage in intimate relationships. Following hysterectomy, patients may experience a profound sense of being incomplete. In Turner et al.'s (2005) article on clinical practice guidelines, the author addresses this sense of wholeness. "Concerns about body image relate not just to 'missing body parts' (Hopwood, 1993), but include complex changes to the person's perception of themselves as a social being" (Turner et al., 2005, p. 163). The change in self-perception may then be translated into isolation, which will be discussed in a later section. Additional issues and concerns in the Ashing-Giwa et al. (2003) study were sexuality (desire and enjoyment), womanhood (self-definition), and body image issues (attractiveness).

Juraskova et al. (2003) interviewed 20 women after receiving treatment for cervical and endometrial cancer. Most of these women were treated with varying types of hysterectomies, external beam radiation, intracavitary radiation (brachytherapy), or a combination. Patients who received a combination of external radiation and brachytherapy had the greatest difficulties with sexual activity and sexual satisfaction

after treatment. Sexual functioning may be inhibited by the treatment side effects of “reduced sexual desire, lack of arousal and orgasm, diminished lubrication and sensations, premature menopause, loss of fertility, reduction in vaginal elasticity, a shortened vaginal cavity, [and] vaginal atrophy...” (Juraskova et al., 2003, p. 267-268).

The participants of the Juraskova study discussed varying issues on the perceptions of femininity and sexual functioning. Because of the sense of loss associated with surgical procedures, these women, similarly to the Ashing-Giwa study, felt incomplete. The women reported the symbolic representation of the reproductive organs to their womanhood. In regards to sexual functioning, it was not only a difficulty based on the actual treatment, but the mental block of the women “still coming to terms with the diagnosis of a life-threatening illness” (Juraskova et al., 2003, p. 271). Wenzel et al. (2003) found that 13% of the 151 patients in their study discussed problems with sexuality as a main difficulty during diagnosis and treatment. Another 49%, while not directly citing concerns about intimacy, body image, and sexual functioning, identify their primary battle with the overall feeling of depression, anxiety, and fatigue, which of course adds to the loss of sexual feeling. The National Cancer Institute additionally notes that a decrease in the level of sexual desire may be more likely due to the stress of the cancer diagnosis than the effects of the radiation therapy (NCI, 2004, p. 44).

Wenzel et al. (2003) suggest that gynecologic cancer patients commonly experience decreased sexual dysfunction due to “physiologic, anatomic, or psychological factors, or a combination of these factors” (p. 217). The authors address the erosion of self-esteem and its role in adversely affecting sexual response. The cosmetic issues, such as disfiguring surgical treatments and hair loss, and loss of reproductive function

Comment [BGG3]: I took this out because the sentence seems self-defeating, as though stating “ONLY 13% cited sex problems while a whopping 49% experienced depression”... I address this in the next sentence.

negatively impact a woman's self-esteem. If she has a negative sexual self-view, her sexual response is consequently lowered. Additionally, other factors, such as stress, depression, and fatigue, will leave a woman with decreased desire, arousal, and orgasm (Wenzel et al., 2003).

2.2.2 Isolation, Fear of Death and Dying, Emotional Distress, and Quality of Life

Noor-Mahomed, Schlebusch, and Bosch (2003) researched suicidal behavior in females diagnosed with cervical cancer. In their efforts, the data found a positive correlation between suicidal behavior and the following psychological issues: depression, anxiety about death and dying, emotional stress/distress. All the participants in the study demonstrated anxiety and depression. Some of their psychological reactions to stress included the sense that no one understood them, depression, anxiety, feelings of awkwardness when close to others, and feelings of loneliness (Noor-Mahomed et al., 2003). The authors discuss the disruption caused by a cancer diagnosis and the accompanying "fear of abandonment, real or perceived, social stigmatization, guilt about role reversal, and concerns about becoming a burden to significant others" (Noor-Mahomed et al., p. 170). Isolation is an inherent consequence of these fears.

In the National Cancer Institute's brochure, "Taking Time", loneliness is addressed as a commonly felt experience from a cancer diagnosis. The NCI supports the patient's sense of feeling "that no one understands what you are going through" (NIH, 2005, p. 9), even when one is with those they love. A patient can feel distant from others, and the isolation will increase the person's distancing themselves from necessary support systems. The NCI addresses sadness and depression as normal responses to any serious illness. In Ashing-Giwa et al.'s (2003) research, the authors found that the women

“experienced depression due to worry about the illness, social isolation, and lack of physical activity” (p. 720). The Caucasian subjects in their research expressed concerns about isolation as well as fears of a painful death and the unknown. In an optimistic finding for early stages of gynecologic cancer, Lutgendorf and researchers (2002) found that one year after diagnosis, depression and anxiety decreased for women. On the other hand, for advanced regional gynecologic cancer patients, anxiety and depression still appeared elevated (Lutgendorf et al., 2002).

Research conducted by Bradley, Rose, Lutgendorf, Costanzo, and Anderson (2006) compiled data on the quality of life, mood, and demographics of long-term survivors of cervical and endometrial cancer. The study was comprised of 152 survivors, the majority of whom were originally diagnosed with early stages of the cancer, and 9% of who had experienced a recurrence. The researchers’ goal was to assess the quality of life at least five years post-treatment. Bradley, et al’s research agrees with the findings of Lutgendorf and colleagues: five years post-treatment, there was not a significant difference in quality of life or depressive symptoms between the gynecologic cancer patients and the control group (Bradley et al., 2006). The data demonstrated higher levels of anxiety, dysphoria, anger, and confusion among the cervical cancer survivors than the endometrial cancer survivors or healthy control group (Bradley et al., 2006).

The conclusions drawn from Bradley et al.’s (2006) research are contradictory to the research of Klee and colleagues (2000a). However, Klee et al.’s reports were based on 18 months post-diagnosis, and included survivors from advanced stages of cervical cancer. Bradley et al. acknowledges that the differences may be based on length of time

post-treatment analyzed in each study; improvements may require more than 18 months post-treatment to occur.

An interesting finding in Bradley and colleagues research was the “quality of life, mood, and mental health were significantly associated with employment and relationship status” (Bradley et al., 2006, p. 485). After comparing the findings from the questionnaires on mood and quality of life to the demographic information, including employment status, and relationship status, the researchers found that those who were unemployed and unmarried had significant decrements. The authors note that, perhaps, those who cannot share their experience of the cancer treatment with someone are at a higher risk for persisting psychosocial problems (Bradley et al., 2006).

In Fawzy’s (1999) review of the significance of psychosocial interventions for cancer patients, psychotherapy can be especially useful after a diagnosis of cancer. The patient may “experience acute grief, anger, anxiety and depression as well as decreased concentration, psychomotor retardation, and changes in appetite, sleep and energy levels” (p. 1562). Patricia Fobair’s discussion of cancer support groups found that stories from group members often included a loss of control with feelings of fear, isolation, anxiety, and anger (Fobair, 1997a). A sense of grief accompanies a cancer diagnosis, as it is a threat to survival and a loss of trust with one’s own body.

Because of the high rates of cancer prevalence and mortality, it is no surprise that a patient with a cancer diagnosis experiences fears of death and dying. When they are surrounded with a support system of people who are not ill, there is the felt experience that those who do not have cancer cannot possibly understand the struggle of adjustment to diagnosis and treatment. “Most cancer patients experience a sense of loss of control

over their own bodies, and (as nothing is certain with cancer) also a loss of direction in life” (Ho, 2005, p. 342). Spiegel’s study on psychosocial interventions for women with metastatic breast cancer found that patients were helped with their sense of isolation by being in a group environment (Spiegel et al., 1989). Providing support to one another also fostered the patient’s sense of purpose.

Changes in a person’s ability to function on a social or sexual level impair quality of life. Additional impairments include “anxiety, anger, guilt and depression about their disease; concerns about changes in life patterns...fear about pain, treatment effects, and loss of independence, as well as the very basic fear of death itself” (Wenzel et al., 2003, p. 215).

2.2.3 Side Effects from Treatment: Fatigue, Pain

Pain is one of the prominent symptoms that can decrease the quality of life in oncology patients (Wenzel et al., 2003). In a study of 151 patients with ovarian cancer, the data showed that 62% of patients experienced pain before the onset of the disease (or during recurrence). In this particular study, the participants were undergoing chemotherapy or surgery at the time. Wenzel, Vergote and Cella address that pain is typically the result of the treatment strategies for the illness. When a patient experiences pain, it directly affects physical functioning, mood, and enjoyment of life (Wenzel et al., 2003). Additionally, fatigue, nausea and vomiting, anemia, and alopecia will have a negative effect on quality of life.

Fatigue is a common result of chemotherapy, surgery, and radiation therapy. As discussed earlier, this could be based on the lowered blood counts, decrease in appetite, the body’s struggle to heal, or anemia (NIH, 2003; Wenzel et al., 2003). The estimated

prevalence of fatigue in cancer patients, the most commonly reported symptom, is about 78% (Wenzel et al., 2003). “Concomitant conditions that may contribute to fatigue include infection, dehydration, sleep disorders, pain, depression, and anxiety” (Wenzel et al., 2003, p. 222).

Several surveys illustrate that fatigue, for a cancer patient, affects nearly all aspects of the patient’s life, with physical, emotional, and psychological consequences (Wenzel et al., 2003). With a diminished quality of life, the fighting spirit of the patient is challenged. It is imperative to develop strategies to preserve the patient’s quality of life in order for the patient to face the challenges of treatment (Wenzel et al., 2003). The NCI’s information on stress illuminates the same point—“stress can also keep your body from fighting disease as well as it should” (NCI, 2005, p. 5). In Turner et al.’s (2005) clinical practice guidelines, the authors note that emotional distress can potentially undermine the patient’s ability to cope with the burden of the cancer diagnosis.

The material presented in this section on psychological responses of a cancer diagnosis point to the support for alternative methods to treat oncology patients. Pharmacologic and psychosocial interventions should address the ramifications of the side effects experienced through the cancer treatment.

2.3 Dance/Movement Therapy

Dance and movement therapists’ goals are numerous and vary according to the population served. For the emotionally disturbed, goals are to uncover and express feelings, gain insight, and develop therapeutic bonds and attachments; for the physically disabled, the goals are to increase movement, encourage self-

mastery and esteem, have fun, and heighten creativity; for the elderly, to maintain a healthy body, enhance vitality, develop relationships, and express fear and grief; and, for the mentally retarded, to motivate learning, increase bodily awareness, and develop social skills (Micozzi, 2006, p. 342)

2.3.1 Mental Health

Dance/movement therapy (DMT) is practiced in a variety of settings including community wellness centers, mental health facilities, prisons, nursing homes, hospitals, and special schools (Schmais, 1974). The roots of DMT are grounded chiefly in Marian Chace's work at St. Elizabeth's hospital. Marian Chace was invited to work with patients based on her study of art and dance and her highly developed observational skills (Schmais, 1974). Chace's therapeutic work was with both long-term chronic patients and short-term patients with positive prognoses (Sandel, Chaiklin & Lohn, 1993). Her underlying assumption in her treatment work was that "dance is communication and this fulfills a basic human need" (Chaiklin & Schmais, 1979, p. 16).

As DMT has developed over the years, the basic premise remains the same. The physical body is a vehicle for emotional expression, and can therefore act as a mechanism for change on both the cognitive and emotional level. Irmgard Bartenieff created a series of fundamental exercises, that grew from her belief that "the individual's movement is the key to integrating physical expression with emotional expression, that is, unifying mind and body" (Levy, 2005, p. 117). The goal of DMT is this unification of cognitive, social, emotional, and physical aspects of the individual, as suggested by the ADTA's definition of DMT- "the psychotherapeutic use of movement as a process that furthers

the emotional, cognitive, social and physical integration of the individual” (American Dance Therapy Association, 2006).

Schmais presents three major assumptions about the practice of DMT: “1) movement reflects personality; 2) the relationship established between the therapist and patient through movement supports and enables behavioral change; 3) significant changes occur on the movement level that can affect total functioning” (Schmais, 1974, p. 10). With the belief that changes on a physical level may encourage changes on an emotional level, and vice versa, numerous studies have examined the efficacy of DMT with mental health patients.

For example, anxiety is a variable measured in multiple studies of dance/movement therapy. Because anxiety engenders a physiological response that manifests itself through physical symptoms such as a racing heart, hyperventilation, and dizziness, it has become a widely viewed and measurable focus of DMT interventions. “Anxiety has a corresponding body pattern which causes massive muscle contraction and blockage of movement (Feldenkrais, 1966). Interpretation of these body patterns and their expressive content is the task of the movement therapist” (Mendelsohn, 1999, p. 67). In the article, “Healing Processes in Group Dance Therapy” (1985), author Schmais discusses the powerlessness associated with anxiety and how DMT can empower a person to cope with anxiety. Schmais suggests that the patient’s inability to function is based on a “misdirected use of energy”. Schmais connects this misuse of energy to the bound movement discussed in Amighi et al. (1999), and writes, “this blocked muscular force not only wastes energy, but also results in distorted bodies and in awkward, inefficient movements” (Schmais, 1985 p. 25). The effectiveness of DMT in relieving

anxiety is connected to the use of the body in motion as its medium. Working on this level, the therapist can guide a patient to “loosen the rigidity that Wilhelm Reich (1949) aptly called ‘armor’” (Schmais, 1985, p. 25).

Linking the movement with the breath helps to achieve reorganization on the physiological and psychological level. In Levy’s book, *Dance and Other Expressive Art Therapies*, Susan Kierr presents a chapter on DMT’s role in treating anxiety. Kierr outlines four theories: psychodynamic, behavior, cognitive, and biochemical. All of the theories exemplify the multiple levels on which anxiety affects a client, and Kierr states that the dance movement therapist “is trained to provide expressive activities that have an impact on all four” (Levy, 1995, p. 120). Through her work, Kierr’s DMT intervention included role-playing methods and yoga breathing exercises to create improvements in patients’ battle with anxiety disorder.

Another suitable population for DMT is children with autism, as movement provides an outlet for non-verbal communication. Movement may be used as an effective tool to form a relationship between therapist and child, and allow for non-verbal communication for children whose communicative speech faculty has not developed (Levy, 1995). Due to the lack of body image awareness in autistic children, DMT “deals fundamentally with sensory motor and perceptual motor development and integration; ultimately building the body image and developing the self-concept” (Leventhal, 1981, p. 1). Increasing body awareness and self-image are fundamental features of DMT’s efficacy.

In an article about DMT with abused children, Goodill (1987) suggests that “harmful experiences can happen on the body level and become manifest in

psychological and emotional disturbances” (p. 59). With this notion in mind, the objective of the intervention is to help the children resume ownership of their own bodies, and establish a sense of control (Goodill, 1987). Goodill assessed the patient’s developmental levels through movement, and used dance/movement tasks to explore movements that had become repressed after the abuse. In addition to other modalities of treatment, the therapy allowed the children to form new relationships and safely delve into their traumatic histories. By achieving a better sense of self on a physical level, an individual may be more empowered to work through emotional and cognitive traumas.

2.3.2 Clinical Utility of Dance/Movement Therapy

Dance/movement therapy can be viewed in terms of emotional benefit and physical benefit. Physical activity, such as exercise or dance, has been documented as creating a state of well-being (Aktas & Ogce, 2005). On this basic level, complete body movement incorporated in dance/movement sessions can provide improvements to body systems, such as the respiratory and muscular systems. In addition, such movement can improve overall health, physical coordination, and muscle tone (Aktas & Ogce, 2005).

In a meta-analysis conducted by Ritter and Low (1996), the authors discuss the expansion of research accompanying the expansion of DMT practice. In support of psychological change, the authors cite multiple studies, such as Brooks and Stark (1989), demonstrating the potential benefits of DMT in psychiatric populations. Brooks and Stark conducted a study of hospitalized psychiatric patients, and found that the experimental group had decreases in anxiety and depression compared to the control group (Brooks & Stark, 1989).

In response to the published work of Ritter and Low, Cruz and Sabers (1998) addressed the measurements used in the findings. Through their recalculations of effect size, the authors found that DMT was more effective than reported by Ritter and Low. Additionally, the researchers noted that the estimates for DMT in effect size are quite comparable to psychotherapy, body-oriented therapies, and medical treatments (Cruz & Sabers, 1998).

In 1999, Erwin-Grabner and colleagues published their research findings from a study using DMT to reduce the effects of test anxiety. Twenty-one graduate and undergraduate students from a health sciences university completed the study (Erwin-Grabner et al., 1999). The researchers measured the pre- and post-test scores with the Test Anxiety Inventory—a self-reported psychometric scale. Within two weeks, five thirty-five minute movement sessions were offered, and the participants were required to participate in at least four. The sessions included activities geared towards “relaxation, self-control, attending to the ‘here and now’, self-awareness, trust, group cohesion, and a sense of mastery in the body and its actions” (Erwin-Grabner et al., 1999, p. 26). The conclusion drawn from the results of the Test Anxiety Inventory was that test anxiety significantly decreased for those who participated in the DMT intervention.

Westbrook and McKibben (1989) conducted research on the effects of DMT for patients with Parkinson’s disease. The research was to evaluate the emotional and neurological status of the group of outpatients. In a comparative study of an exercise group to a DMT group, the researchers found improvements in the movement initiation of the patients (Westbrook & McKibben, 1989). However, the authors did not find significant changes in depressive symptoms, although the family members of the patients

reported subjective improvements in mood. In a follow-up twelve weeks after the completion of the study, the scores on the Beck Depression Inventory were lower than the initial testing (Westbrook & McKibben, 1989). Although depression was not a significant finding in the previous example, the changes in initiation of movement point to the many adaptations of DMT for varying populations.

In a study conducted by Berrol, Oooi, and Katz (1997) adults with neurotrauma were provided DMT sessions for five months, twice weekly. The findings were positive, with the patients of the experimental group perceiving the intervention as beneficial in terms of mood, social interaction, physical function, and energy levels.

In Dibbell-Hope's (2000) research on breast cancer and the utility of DMT, the author notes the following improvements produced by DMT: "redefinition and strengthening of body-image, clarification of ego boundaries, outlets for relief of physical tension, anxiety, and aggression, reduction in cognitive and kinesthetic disorientation, increase in capacity for communication, pleasure, fun and spontaneity and support for therapeutic medical goals" (p. 52).

Thulin (1997), dance/movement therapist, has been involved in the treatment of patients with psychosomatic disorders. Thulin described work with 10 patients over the course of a few years, and used DMT to treat the emotional disturbances that had manifested in physical symptoms. Thulin discussed how psychosomatic disorders are difficult to treat because many of the psychological factors began in early childhood before the patients had a developed verbal language. Therefore, verbal therapies may not have been as successful as creative arts therapies. Since the patients were unable to verbally express themselves, DMT enabled them to explore their repressed feelings and

emotions; have insight into the interconnectedness of the mind and body; increase their self-esteem and “zest for life” (Thulin, 1997, p. 28); and establish a trusting relationship that allows the person to be seen and understood on a body level (Thulin, 1997).

A case study presented in Thulin’s published work described a patient, Inga, suffering from rheumatism. Although Inga’s disorder did not disappear, it became easier for her to manage. Her movement repertoire expanded and became more dynamic, as her muscle tension decreased and joint mobility increased. Inga’s response included a more open expression of emotions, and a sense of empowerment, which encouraged her to make positive changes in her life (Thulin, 1997).

With a reawakened connection to one’s own body and emotions, a sense of control is gained that could potentially alter other facets of one’s life. In Anne Krantz’s “Healing through Dance” (2005), the author reminds the reader that one’s creativity and “connection to one’s body as source of discovery, pleasure, and wisdom, need to be revitalized” (p. 2). When a person achieves this, it helps her to make sense out of her experience. One is then given the tools to understand her own illness (whether medical or mental), and how on a body level, she may be able to relieve her own pain and discomfort. The patient is better prepared to tolerate the fluctuations in her mental and physical states, thereby allowing her greater access to her own resources for dealing with life (p. 4).

2.3.3 Medical Care

Over the past few years, dance/movement therapists have developed groups to apply DMT to oncology patients, lead by therapists such as Anne Krantz, Ilene Serlin,

Susan Sandel, and Nandi Szabo. Out of these groups, research studies and written works have emerged evaluating the effects of DMT on the psychological responses that are inherent in a cancer diagnosis.

In Antoni's (2003) research on the effect of an HIV infection on immune functioning, the author summarizes the inherent result of a serious medical diagnosis applicable to the research on gynecologic cancer:

Because HIV infection presents multiple psychosocial challenges that can create a state of chronic stress it may overwhelm an individual's coping skills and external resources, which significantly impairs their ability to emotionally adjust to ongoing and future demands of the illness (p. 174)

In Cohen and Walco's work with children and adolescents with cancer, the goal was to teach the patients to manage their distress, in the hopes of facilitating their ability to cope with it. In addition, Cohen and Walco focused on modulating affect, and the child's ability to adapt to the demands of their situation. The authors believe that with better coping strategies comes decreased isolation and enhanced social adjustment (Cohen & Walco, 1999). The narratives presented in their work highlighted the dance/movement therapist's ability to work on various developmental levels through a physical approach. The therapists created an empathic environment, which allowed the patients to explore their situations, new bodies, and altered body image issues. The children and adolescents were provided tools that encouraged rewarding relationships, resources within themselves to meet their environmental demands, and a sense of personal worth (Cohen & Walco, 1999).

Judith Mendelsohn's (1999) work with hospitalized children was based on using movement to increase the children's communication and expression of their needs, on both a physical and emotional level. Through the medium of movement, the aim was to "minimize the trauma, suffering and stress which children undergo in the hospitalization process" (Mendelsohn, 1999, p. 65). Mendelsohn presented case narratives of three children between the ages of 5 and 8 with whom she worked in group and individual sessions. She concluded that for children who are focused on the sick parts of their body, DMT improved their body image, decreased their anxiety, and allowed them to be more active in their experience (Mendelsohn, 1999). It gave them the opportunity to identify and explore their full movement potential (Mendelsohn, 1999).

Sandel, dance/movement therapist, and colleagues completed a study in 2005 of a 12-week intervention with 35 women with breast cancer. The intervention utilized the Lebed Method, Focus on Healing through Movement and Dance. In this intervention, the Lebed Method, typically a structured sequence of exercises, was modified to integrate DMT methods. Two groups were recruited from 2 cancer centers in Connecticut. The treatment group received the intervention for weeks 1 to 12, and the wait list control group received the treatment from weeks 13 to 25. The outcome measures were obtained at baseline, 13 weeks, and 26 weeks. In the twelve weeks, the subjects received 2 sessions a week for the first 6 weeks, and 1 session a week for the remaining 6 weeks. The goals of the trial were to address the physical and emotional needs of the women and their quality of life measure and seek out any improvements throughout the intervention (Sandel et al., 2005).

The researchers used the FACT-B questionnaire, specifically designed for quality of life measures for breast cancer patients. In addition, they employed the Body Image Scale, and measured shoulder range of motion and arm circumference. The findings of the study were positive showing a statistically significant change in the FACT-B measurements for health-related quality of life as well as Body Image measures. These improvements were found in both groups after the Lebed Method/DMT intervention. An encouraging result is that the higher scores in the intervention group, measured at the crossover phase, were maintained, and suggests that this improvement may not have been transient (Sandel et al., 2005).

Ilene Serlin's work on the West Coast has contributed valuable information to the field of DMT. In Serlin, Classen, Frances, and Angell's research (2000), the authors reiterate the theory that dance/movement therapists have a unique ability to work with medical patients, specifically breast cancer patients. "Dance therapists, working holistically with mind, body, and spirit are uniquely positioned to work with illnesses that become manifest in body, mind, and spirit" (p. 123). This belief breathes life into the development of the supportive-existential group designed to bring the patients back into connection with their unfamiliar bodies. The goals of the existential model are to create a safe environment for the patients to express themselves; improve their communication skills through group rapport and empathy; and better prepare them to tolerate strong emotions (Serlin et al., 2000).

Approximately thirty breast cancer patients completed the three-year study, consisting of 12 weekly sessions, interviews, and self-reporting measures. The dance/movement intervention was based on kinesthetic imagining. This process allows

for the movement to make the images more explicit through the use of props, music, or drawing. Significant improvements were found through the self-report data—increases in fatigue, vigor and tension, and decreases in depression and anxiety (Serlin et al., 2000). However, the observed changes from the researchers were especially inspiring. Serlin's group noticed that participants seemed to become more connected to their bodies over time. Women who did not initially participate took on the role of leader in later sessions. The movements and body attitudes associated with depression, hopelessness, and sadness, became invigorated and confident (Serlin, et al, 2000). The intention of the treatment was to enable the women to have a greater sense of control over their bodies and mind. Throughout the experience, improved sense of empowerment and empathy and understanding from group process allowed them to explore the emotional and physical changes in their lives.

Dibbell-Hope summarizes the benefits of the group process in her work on DMT and breast cancer: "It provides an effective, efficient and economical system of peer support, offers information, hope and understanding from other patients facing similar issues, and often leads to increased responsiveness to medical treatment and longer survival time" (Dibbell-Hope, 2000, p. 52). Motivated by this theory, in addition to a belief that a physical ailment requires a physical treatment, Dibbell-Hope sought to determine if Authentic Movement could positively impact women adapting to breast cancer, and if this impact could last over time.

The study was comprised of 33 women with stage I or stage II breast cancer who had completed treatment at least six months prior to the study. The treatment group received Authentic Movement sessions once a week for 6 weeks. The researcher

implemented the Profile of Mood States (POMS), Symptom Check list 90 (SCL-90) for psychological distress, the Borscheid-Walster-Bohrnstedt (BWB) Body-Image Scale for body image and self-esteem, the Marlowe-Crowne Social Desirability Scale for measuring the outcome variables, and interviews to acquire qualitative information (Dibbell-Hope, 2000).

In the qualitative findings, Dibbell-Hope discovered that many of the women felt that the group provided a safe environment that decreased their sense of isolation and increased their ability to cope with their negative feelings towards their body and their mood disturbances. However, in the quantitative data, little improvement was found in overall mood, distress, body image, and self-esteem. On subscales of both the POMS and the SCL-90, significant improvements in vigor, fatigue, and somatization did occur (Dibbell-Hope, 2000).

Positive changes in vigor, self-esteem, mood, and body image may increase a patient's ability to cope with their life-threatening illness. Coping is made more difficult by the "unknown" associated with the disease; without a clear guarantee of treatment, there is no certainty of a positive outcome (Cohen & Walco, 1999)—therefore maintaining a positive outlook and strong sense of coping will be difficult. Dance/movement therapy can be adapted to all environments, enabling a patient to adapt to the demands of one's environmental situation, and adjust one's own behavior and internal states to better cope with the situation.

The thread among the studies in DMT and cancer care is the connection between the mind and body being reinforced or rejuvenated. "At its very core, dance/movement therapy emphasizes the holism of mind and body, thereby providing a new avenue for

exploring the complicated inter-relationship of factors involved in coping with cancer” (Cohen & Walco, 1999, p. 41). The patients are able to identify new outlets to facilitate in their healing during a stressful, life-changing experience. The sense of empowerment during this time may inspire the patient to explore a wider variety of positive and constructive communications with their healthcare professionals and significant people in their lives. They may find a renewed sense of hope, which could potentially contribute to an increased adherence to medical treatment, and improved coping strategies.

2.3 Mind-Body Connection

2.4.1 Dance/Movement Therapy and the Mind-Body Connection

Dance/movement therapy operates under the premise that emotions manifest themselves in held body tensions (Levy, 2005). A dance/movement therapist utilizes the physical being in the effort to create alterations in the emotional mindset. “Through working on the body, the mind can be changed and the soul can be enriched” (Ho, 2005, p. 342). In addition, the belief is that changes in the emotional and cognitive awareness of an individual will cause a change on the physical level.

As outlined in the previous section, DMT with oncology patients allows for perceived psychological changes in the individuals. DMT has “the potential to enhance or maintain health and alleviate the discomforts or symptoms of disease or injury” (Goodill, 2005, p. 81) through its connections with the musculoskeletal system, the breath and physiological functioning of the body, and the immune system (Goodill, 2005). Examining the use of breath provides insight into the relaxation response utilized in DMT. The ability to manipulate the breath empowers an individual to have a stronger

control over the mental state (Rama, Ballentine & Hymes, 1998). Rama, Ballentine, and Hymes further develop this point by suggesting that once people acknowledge the power of the breath, they obtain greater voluntary control over the function of the autonomic nervous system.

The breath is a telltale sign of a person's mental and emotional being. For instance, when a person is scared or feeling anxious about something, the breath becomes rapid and shallow. By evening out the breath, and finding a deeper, more fluid rhythm, the individual is able to calm down. Not only is the rhythm and rate of the breath a reflection of one's condition, it is also a mechanism to alter it (Rama et al., 1998).

Rama and co-authors note that the ancient yogic texts discussed this reciprocal relationship between the mind and body. They refer to the flow of energy or prana as being the mind's way of affecting the body. Alternatively, the body has the power to affect the mind through the same outlet (Rama et al., 1998). The authors differentiate between psychology and yoga in the following argument:

Psychologists have shown that there is a correspondence between personality types and breathing patterns. Yoga science also recognizes such a correspondence, but according to yoga, the relationship between the breath and mind is reciprocal. If a certain state of mind results in a certain mode of breathing, then conversely, by consciously adopting that mode of breathing we can evoke the corresponding state of mind (Rama et al., 1998, p. 84).

Dance/movement therapists have adopted similar principles of using the mind-body connection to elicit psychological changes versus the approach of verbal therapy focusing purely on the emotional, cognitive, and social aspects of an individual. Dance/movement therapy allows not only a physical release, but also an emotional release in a non-verbal format. Through this release, interpreted by verbal exchanges, an individual has multiple outlets to explore the inner state.

Gorelick (1989) proposes that the creative arts in therapies are effective treatments because of the ability to work within the metaphor of alternative media. He also states that metaphor and imagery relate to the “basic elements of our nature, including the unconscious, defenses, relationships to reframing of old experiences and learning new ways, self-actualization and transcendence” (Gorelick, 1989, p. 152). This relationship is a significant part of the therapeutic process. In Goodill and Morningstar’s (1993) work with medically involved children, the authors provided two objectives for the use of “dance/movement therapy as a process- and body-oriented form of supportive psychotherapy”. The treatment plan can: “1) provide medically involved children with opportunities to integrate changes in body appearance or functioning, and 2) facilitate the appropriate expression of feelings associated with illness, injury, or the treatment of either” (Goodill & Morningstar, 1993, p. 26). The anticipated results of applying DMT to medically involved children can be further extended to an adult population on the same basis of effectiveness.

Image work is one means of developing the patient-therapist relationship and inspiring the patients to engage in the healing process.

It gives [the therapist] an opportunity to work collaboratively with patients while enabling them to move towards the kind of personal integration, fulfillment (sic) and authenticity that comes with 'living our own life' 'becoming whole' or 'being the captain of our own ship'. It can facilitate deep insights and profound changes through which, as a consequence, healing naturally flows. (Elliott, 2003, para. 5)

Guided imagery can heighten body awareness as well as the mind-body connection. Patients using DMT may feel increased control over their own body, mind, and life. This growing sense of control was a recurring theme in the studies analyzing the role of DMT for patients with a cancer diagnosis (Ho, 2005; Serlin et al., 2000). The use of imagery is not a novel method in the treatment of physical ailments. As Achterberg (1985) discusses in *Imagery in Healing*, the role of a shaman incorporates the use of imagery for healing. "In order to augment the power of the sick person, the shaman guides the person to focus on his or her ill parts of the inner body by imagery and support him or her to imagine that the sick parts are healing." Achterberg discusses the powerful ability of imagery as the communication mechanism between emotion, perception, and body changes. Dance/movement therapy, as defined previously, is an integration of the physical and emotional elements of a person, allowing the verbal and non-verbal expression of the mental state.

While integrating one's mental and physical state through movement and breath awareness, a patient can incorporate imagery to further explore this level of self-awareness. Sandel (1993) states "imagery making stimulates the connection between feeling states and symbolic representation. Thus it is the vehicle through which the action becomes transformed into symbolic communication" (p. 112). Serlin and colleagues

(2000) research utilized kinesthetic imagining as part of the movement therapy intervention. Kinesthetic imagining includes the use of props, music, or drawing to enhance the imagery of the group. The authors note that the participants are encouraged to create their own imagery for healing, and the structures of the group support this. “In kinesthetic imagining groups, imagery meditation, and movement are all combined as the process of telling and bearing witness to members’ stories develops” (Serlin et al., 2000, p. 130).

In Ackerman and Turkoski’s (2000) article on using guided imagery to reduce pain and anxiety, the authors include the following three points:

- * People feel a sensation of peace and relaxation when they view something pleasing to the eye.
- * Responses to pleasant images and desirable states have a positive impact on the healing process.
- * Therefore, viewing pleasing scenery or envisioning positive environments helps our minds positively connect with our bodies to facilitate healing (p. 524)

Guiding patients through an imagery process can evoke movement that is symbolic of the emotional experience and, therefore, can elicit expressive movement and verbal processing. In Ackerman and Turkoski’s case study, the authors found decreased pain and stress with a diabetic patient suffering from chronic pain. In addition, the patient was more willing to participate in painful rehabilitation exercises (Ackerman & Turkoski, 2000). This example shows the potential for guided imagery alone to provide relief to a patient coping with chronic pain. Acute pain or chronic pain is one of the many stresses related with a cancer diagnosis.

2.4.2 *The Mind-Body Connection and How it Relates to Cancer*

In Juraskova et al.'s (2003) study, the authors conclude that women with "active coping strategies (e.g. fighting spirit, determination, co-operation) found the treatment and its side-effects more tolerable and less distressing, even when faced with invasive procedures such as brachytherapy" (p. 275). To reiterate, the main psychological responses to gynecologic cancer are depression, anxiety, fear of death and dying, isolation, body image and self-esteem issues, and side effects from treatment (fatigue, anxiety, infertility). As a whole, these factors affect the overall quality of life of each individual battling cancer.

Miller (2003) suggests that when the quality of life of a patient is significantly impaired treatment adherence is often complicated. Various studies and articles note that coping, self-efficacy, stress, social support, mood and emotion, spirituality and religion highly impact health (Ashing-Giwa et al., 2004; Goodill, 2005; Serlin et al., 2000; Spiegel et al., 1989; Turner et al., 2005; Wenzel et al., 2003). Therefore, if a patient's self-efficacy and adherence to treatment regimen are impaired, the outcome of the diagnosis may worsen.

In Spiegel et al.'s 1989 study on psychosocial treatments for patients with metastatic breast cancer, the authors found improvements in the *quantity* of life when their original goal was to improve the *quality* of life. Eighty-six subjects were recruited and divided into a control group and intervention group. The intervention consisted of a year-long weekly support group for 90 minutes. The patients were encouraged to discuss their emotions about the illness and the effect it had on their lives. Self-hypnosis strategies were taught to the subjects to help them control the pain experienced from

chemotherapy and radiotherapy. The initial goal was to develop a strong support system to help reduce the social isolation experienced by the patients. The authors note that the patients encouraged each other to gain assertiveness towards their doctors (Spiegel et al., 1989).

The researchers found that the psychosocial intervention provided to the treatment group increased the survival rate by an average of twice as long as the control group. The authors emphasize that the goals of the program were “living as fully as possible, improving communication with family members and doctors, facing and mastering fears about death and dying, and controlling pain and other symptoms” (Spiegel et al., 1989, p. 890). Through these goals, the patients were able to improve their quality of life as well as the quantity. Creating a sense of belongingness and an environment where one can express one’s own feelings may have been one of the supporting factors of the group (Spiegel et al., 1989). The conclusion of the study suggests that neuroendocrine and immune systems [psychoneuroimmunological] may be an essential link between the emotional processes of an individual and the course of their cancer (Spiegel et al., 1989). Because of the tools learned to control their pain, it is possible that patients had a better ability to maintain their routine activities and exercise regimens (Spiegel et al., 1989), thereby becoming more actively involved in their personal healing process.

This study has become an example of the utility of support groups for the treatment of psychological factors emerging from a cancer diagnosis. By increasing one’s sense of empowerment over her own health, a patient may have better coping skills to deal with the stress of diagnosis, treatment, and rehabilitation. As Achterberg and colleagues note, one of the major benefits of support groups is the strong bond with other

members, which creates an experience that may empower individuals in other aspects of life (Achterberg et al., 1992). In the discussion on mind-body interventions, the authors write that by quieting the mind, an individual may use it to mobilize the body in its own healing process. Perceived health is a factor in how one responds to the illness with which one is coping. Many studies have shown that perceived health is a stronger predictor of health than some objective factors. Therefore, the effect of an event, issue, or diagnosis, and what it symbolizes in a person's mind, has a direct effect on their health (Achterberg et al., 1992).

Multiple methods of mind-body interventions are highlighted in Achterberg and colleagues' discussions in the report to the National Institutes of Health on Alternative Medical Systems and Practices in the United States (1992). Hypnosis, biofeedback, imagery, yoga, dance therapy, music therapy, and art therapy are all listed as possible interventions that have been shown to create positive changes in a wide variety of populations. Providing patients with these alternatives encourages changes in their attitudes, perspectives, behaviors, and possibly physiology (Achterberg et al., 1992). Dance therapy borrows from many other modalities, thereby utilizing physical activity with mental processing.

The Gate Control Theory [Melzack and Wall, 1962] posits that the central nervous system only processes certain impulses traveling up the spinal cord at one time (Ackerman & Turkoski, 2000). Through guided imagery, the intention therefore is to block the path of pain by triggering feelings of pleasant thoughts. The pleasant sensations will decrease the amount of pain stimuli being transmitted to the brain. Pain, for instance,

can be thought of as a mind-body phenomenon, thereby being receptive to mind-body interventions (McCaffrey et al., 2003).

Once the pain stimuli are received in the central nervous system, they are interpreted by the limbic system, reticular formation, thalamus, hypothalamus, medulla, and cerebral cortex (McCaffrey, Frock, & Garguilo, 2003). The perception of the pain is also conditioned by past experiences with pain and personal attitude towards pain (McCaffrey et al., 2003). Additionally, another physiological theory proposes that guided imagery, breathing exercises (Sudarshan Kriya yogic breathing), or relaxation response methods are successful because of an increase of endorphins (Ackerman & Turkoski, 2000; Brown & Gerbarg, 2005a; Jacobs, 2001). An increase in endorphins raises the pain threshold and increases relaxation, activating the parasympathetic nervous system. This, in turn, decreases blood pressure, respirations, and heart rate (Ackerman & Turkoski, 2000).

Maier and Watkins (2003) published a paper focusing on the immune-to-brain communication and its implications for cancer and cancer treatment. The authors obtained information suggesting that sickness behavior is produced by cancer because of the link of cytokines and the central nervous system. They concluded that the implication is “that bidirectional pathways between the immune system and the brain may be at the heart of some of the ‘side effects’ of cancer and its treatment” (Maier & Watkins, 2003). The authors suggest that further exploration is needed, particularly in regards to chemotherapy, to mediate the effects of cancer on a physiological and behavioral process.

In a psychoneuroimmunological model, Antoni (2003) describes a 10-week cognitive behavioral stress management (CBSM) intervention for patients with Human

Immunodeficiency Virus (HIV). Many of the stressors inherent in an HIV diagnosis are similar to those earlier proposed for gynecologic patients. Throughout the process of diagnosis and treatment, HIV patients struggle with depression, hopelessness, anger, and fear of death and dying (Antoni, 2003). Antoni notes that an improved adherence to a stress management protocol, and improved coping skills, is predictive of a slower rate of disease progression. The CBSM intervention was designed to improve self-efficacy and perceived control, while teaching coping strategies and maintenance of social support. Results of Antoni's research showed reduced depressed mood, and reduced anxiety, indicated by reductions in 24-h urinary cortisol, norepinephrine, and increases in serum DHEA-S and testosterone levels.

Reduced levels of anxiety and depression are associated with a higher quality of life with patients of advanced gynecologic cancer (Costanza, Lutgendorf, Rothrock, & Anderson, 2006). Costanza and colleagues analyzed coping strategies, engagement, and avoidance among advanced gynecologic cancer patients one-year after receiving extensive chemotherapy. Through their research of the literature, the authors found valuable information about the relevance of coping strategies to quality of life. They found that engagement coping strategies, sought out in social support, were associated with better outcomes in regards to social well-being, relationship with healthcare professionals, functional status, and clinical status (Costanza et al., 2006).

Avoidant coping strategies showed a positive relation to higher levels of anxiety, depression, and distressed mood, in addition to poorer quality of life. In contrast, a better quality of life and lower levels of distress are related to positive reframing, acceptance, and active coping. According to Kiecolt-Glaser, McGuire, Robles, and Glaser (2002),

altered immunity functioning is associated with repression, denial, escape-avoidance, and concealment (concealment of diagnosis from others) coping strategies. The authors found that each style affected the immune functioning of various populations assessed by measurements of items such as cortisol, T cells, monocyte counts, and serum glucose. One conclusion drawn by the authors is that self-disclosure (emotional disclosure) interventions have positive immunological consequences, supporting the power of mind-body interventions (Kiecolt-Glaser et al., 2002).

2.4.3 Psychosocial Interventions for Cancer Patients (Including Support Groups)

At a time when one is being treated purely on a physical level, it is necessary to include a psychosocial intervention. "...despite the enormous need for psychological care, most people with medical illnesses do not receive screening or treatment for their psychiatric symptoms" (Achterberg et al., 1992, p. 11). The human factors in the relationship between therapist and patient provide empathy, compassion, and support (Achterberg et al., 1992). This relationship creates a holding environment where a patient is enabled to explore the deeper meanings of the experience. "Through dialogue, the loneliness of carrying the illness alone is reduced. Through the connection with the warm and facilitative presence of the therapist, the patient can reexperience and release old memories and feelings, thus opening channels of deep healing" (Serlin, 2006, p. 83).

The National Cancer Institute (2002) recommends support groups for oncology patients as an outlet to attending to the emotional burden of cancer. The design of support groups is based on a confidential atmosphere where patients (or survivors) can express the challenges experienced with the illness among others who understand (NCI, 2002). In

Yalom's (1995) text on group psychotherapy, the author points out that a unique quality of group therapy is the universality of the members. Oftentimes, patients believe that they are isolated in their experience, as no one will understand the problems, thoughts, and fantasies they are having (Yalom, 1995). There is a sense of relief once the participants realize that they are not alone in their struggle, and other members can relate to the psychological responses they are experiencing.

In addition, members of a group will benefit from the altruism arising from the give and take relationship (Serlin et al., 2000; Spiegel et al., 1989; Yalom, 1995). As Dibbell-Hope summarizes, group therapy provides hope and understanding through peer relationships (Dibbell-Hope, 2000). Fobair cautions that support groups will evolve with the same group dynamics as any other group. Therefore, there may be instances of resistance, scapegoating, destabilization of members leaving or new members entering, and anxiety (Fobair, 1997b). A group leader needs to maintain the boundaries of the group and provide an attentive, respectful, genuine relationship with each individual group member (Fobair, 1997a). "When a group is cohesive, each member feels accepted by other members...discovering that others share one's feelings and problems is curative" (Fobair, 1997b, p. 67).

An interesting finding that emerged from several studies (Ashing-Giwa et al., 2004; Fobair, 1997b; Wenzel et al., 2003) was the need for psychosocial intervention in early diagnosis. Wenzel, Vergote and Cella found that 57% of 161 survivors stated, retrospectively, that counseling would have been desirable at the time of the diagnosis. In addition, 5-10 years post diagnosis, 48% of the same sample said that they were currently interested in participating in a support program.

Fobair (1997b) cites the Omega Project conducted by Weisman, Worden and Sobel in 1980. The researchers reported improvements in communication and coping skills, as well as psychological adjustment, among the patients in the intervention group. Additionally, in 1990, Fawzy conducted a study with 68 patients split into an experimental group and a control group. From the study, Fawzy found that patients in the experimental group reported an increase in mood and active coping techniques, with decreases in confusion and fatigue. The immune systems of the participants in the experimental group were also healthier. These findings were consistent even six years later with lower mortality rates and fewer recurrences of disease (Fobair, 1997b).

Several studies in the last 20 years have supported the belief that group psychosocial interventions can improve mood, develop more active coping methods, and increase health-enhancing behavior, thereby being an effective choice of therapeutic treatment for oncology patients (Fobair, 1997b).

2.4.4 Dance/Movement Therapy and Other Mind-Body Methods in Relation to Cancer Care

The healthcare community is increasingly recognizing the value of the creative arts in psychotherapy. DMT offers a unique approach to psychotherapy combining the benefits of verbal therapy with a physical approach. This is particularly significant for oncology patients who are struggling with the division of mind and body, and feelings of betrayal by the body (Dibbell-Hope, 2000; Sandel et al., 2005; Serlin et al., 2000). The “underlying working premise of DMT: the interconnectedness of mind and body. Dance and body movement may elicit changes in emotions and feelings” (Ho, 2005, p. 342).

Dance/movement therapy creates a safe, trusting, warm holding environment for patients to develop their understanding of their symptoms and combat the physical manifestations of their mental dysfunctions through movement, imagery, relaxation exercises, and verbal processing. Ilene Serlin eloquently summarizes the efficacy of expressive therapies for individuals battling a cancer diagnosis:

Symbolic expression of the experience of living with illness is indirect and less threatening than direct expression. Therefore, patients can move beyond acceptance to a deeper confrontation with mortality and an awareness of the preciousness of life (Micozzi, 2007, p. 82).

Her thoughts run parallel to the ideas of Gorelick (1989) on the benefits of creative arts therapies. The author's belief is that the creative arts are successful because they could be less anxiety provoking than direct verbal psychotherapy. The metaphor that emerges from a patient's battle with illness can be worked through via the medium of art, music, or dance. Serlin describes this as the symbolic expression provided by creative processes that contain the individual's grief being transformed into something through which the individual can resolve or transform it (Micozzi, 2007). In Goodill's (2005) text on medical DMT, the author suggests that there are times during an individual's diagnosis that denial may be better left untouched. A patient may be more able to mobilize and plan further action when moving through their diagnosis, treatment, and rehabilitation. Some forms of verbal therapy aim to break down defenses, such as denial, which could prove to be counter-productive.

Movement therapy enables a patient to explore their own healing process through movement and images, thereby utilizing both the emotional and physical aspects of

healing (Micozzi, 2006). Achterberg and colleagues (1992) present the following examples as results clinically proven to derive from DMT:

...developing body image, improving self-concept, and increasing self-esteem; facilitating attention; ameliorating depression, decreasing fears and anxieties, and expressing anger; decreasing isolation, increasing communication skills, and fostering solidarity; decreasing bodily tension, reducing chronic pain, and enhancing circulatory and respiratory functions; reducing suicidal ideas, increasing feelings of well-being, and promoting healing; and increasing verbalization (Achterberg et al., 1992, p. xiv).

Dance/movement therapy, as a treatment for cancer patients, seems to be a viable choice, as “a trauma to the body requires a treatment that includes the body” (Dibbell-Hope, 2000, p. 53). Dance, and the use of one’s own body in healing, is not a novel idea. Dance has its place in ancient history as a powerful form of healing (Serlin, 1993). An individual’s movement makes the unconscious conscious, and creates a more tangible form of one’s own emotions and thoughts. In Serlin’s (1993) piece on the root images of healing, she refers to the healing methods of Shamans, Navajo, Apache, and Cochiti. The author notes that the archetypal images surfacing in dance therapy sessions are a way of reconnecting an individual to a “sacred perspective” (p. 67). The dance/movement therapist serves to guide and support a patient on both a physical and emotional level, attuning to both aspects of self that the patient is struggling with.

2.5 Summary

As suggested throughout the review of literature, both the physical and the psychological aspects of a cancer patient need to be attended to (Ashing-Giwa et al., 2004; Dibbell-Hope, 2000; Noor-Mahomed et al., 2003; Serlin et al., 2000; Turner et al., 2005; Wenzel et al., 2003). Integrating the diffuse parts of an individual during a medical treatment plan may strengthen the patient's ability to communicate better with healthcare professionals, family and friends, follow their treatment schedule, and process the experience as they move through it. When diagnosed with gynecologic cancer, a woman suffers from multiple psychological responses, such as anxiety, depression, sexual dysfunction, isolation, body image issues, fatigue, and others previously discussed. Since DMT has been studied to positively affect body image, body awareness, self-image, and counter anxiety, depression, and stress, one would then suggest that it would be a valuable addition to the therapeutic treatment of the patient.

Turner et al. (2005) suggests that healthcare professionals have only rudimentary training in treating the psychosocial issues with which patients are confronted. Therefore, guidelines have been suggested to develop psychosocial treatment, as the necessity to treat the emotional burden of the disease is increasingly recognized. Ilene Serlin supports expressive therapies being integrated into the medical system as "expressive therapy may ease anxiety reactions before examinations, mastectomy...and compliance with aftercare" (Micozzi, 2007, p. 86). The following study proposes the utilization of DMT to ease the psychosocial and psychological issues accompanying the treatment of high dose radiation brachytherapy for women with gynecologic cancer.

CHAPTER 3: METHODOLOGY

3.1 Design

In order to develop a clinical model of dance/movement therapy (DMT) for women with gynecologic cancer, the researcher conducted a matrix model literature-based study. Through the creation of these matrices, one is able to reduce the available research into a clear and concise format; or, in other words, to make order out of potential chaos (Garrard, 2004). In the literature review, the material focused on gynecologic cancer and its treatment; the psychological responses identified for women diagnosed with gynecologic cancer; the clinical utility of DMT, as well as its application to medical care; and the efficacy of interventions that address the mind-body connection. Both empirical and non-empirical information was identified to support the notion that DMT would be a viable alternative option for psychosocial intervention for the population specified. The matrices serve to illustrate the data addressing the researcher's objective, in addition to developing the clinical intervention outlined in the Discussion section of this paper.

3.2 Subjects

There were no human subjects in this study.

3.3 Procedure

A literature-based study allows a researcher to compile new information about a topic from previous research (Mertens, 2005). In this study, no information was available about DMT specifically for women with gynecologic cancer. The matrix model was

chosen to organize the information from multiple studies and published works to draw parallels with pre-existing works to the new theory and program design. By organizing the material in matrix format, one is able to “efficiently and reliably concentrate on the information itself” (Garrard, 2004, p. 115). Studies and articles were collected from databases such as PsycInfo, OVID Medline, and CINAHL, in addition to material gathered from Master’s theses and educational materials from the Creative Arts in Therapy program at Drexel University. Search keywords included dance therapy; movement therapy; psychoneuroimmunology; oncology; psychooncology; gynecologic cancer/gynecologic malignancies; radiation therapy; high dose rate brachytherapy; mind body approaches; and mind body connection (as well as combinations of various keywords). The aforementioned keywords and phrases were utilized in order to obtain a comprehensive amount of literature on the four main topics necessary to develop the clinical model. Adopting the ancestry method (Mertens, 2005), additional sources were garnered through reference lists. Additionally, other researchers or experts in the field of complementary and integrative medicine, dance/movement therapy, and oncology recommended references.

3.4 Operational Definition of Terms

The following constructs have been defined within this section, as their specific relevance to the topic is significant. Throughout the data, the terms have emerged as key psychological responses to gynecologic cancer. Additionally, the research gathered may have defined the terms per the measurement tools used in the specific studies. For purposes of this research, the following definitions are focused on.

Anxiety-as discussed in Sadock and Sadock's *Synopsis of Psychiatry* (2003), anxiety is differentiated from fear as a signal to alert the individual experiencing it. "It warns of impending danger and enables a person to take measures to deal with a threat" (p. 591). Anxiety is comprised of both physiological sensations, such as palpitations and sweating, as well as an awareness of being nervous or frightened (Sadock & Sadock, 2003). In addition to the physiological response, the individual may experience distortions in thinking, perceiving, and learning.

Depression-depression is associated with a decrease in energy and interest, increased feelings of guilt, difficulty concentrating, changes in appetite, and suicidal ideation. Additionally, cognitive impairment may occur, as well as impaired functioning on the social, interpersonal, and occupational levels (Sadock & Sadock, 2003).

Body image-the term body image was not operationally defined in the majority of articles found for this research project. To borrow from Pylvänäinen (2003), a tripartite model was considered in developing the clinical model. Body image is comprised of image-properties, body-self, and body-memory. Image-properties are based on the individual's self-perception of the appearance of their body, including their own beliefs about the body. This includes the socially constructed ideals. Body-self is described as the core of the individual in relation to the environment. Body-memory encompasses past experiences and memories that contribute to the current evaluation of sensations; this includes habitual, traumatic, and erotic past experiences (Pylvänäinen, 2003).

Fatigue-Merriam-Webster's Dictionary defines fatigue as "weariness or exhaustion from labor, exertion, or stress; the temporary loss of power to respond that is induced in a

sensory receptor or motor end organ by continued stimulation” (Merriam-Webster Online Dictionary, 2007).

3.5 Data Analysis

After thorough investigation of the research material, the main elements of the text were divided into the matrices highlighting the published works and their significant elements. The outcomes, techniques, and theories were collated into specific sections, although many had information that could have been included in multiple matrices. The matrices include the author, publication date, design (if applicable), subjects, results, and relevant information pertaining to this research study. Parallels were then drawn from both the quantitative and qualitative research and are available in the Results section. These parallels were found by summarizing each matrix by topic and lists of authors with relevant information. Conclusions can then be drawn using qualitative data analysis techniques such as noting patterns and themes; making contrasts and comparisons, which sharpen understanding; and clustering and counting (Miles & Huberman, 1994). Prominent themes that surfaced in the analysis of the data were used to design the clinical model for the DMT intervention.

Chapter 4: Results

In order to develop a clinical intervention, research was compiled to establish a foundation for the techniques and goals of the group, specific to the population. The goal of dance/movement therapy (DMT) is to create a safe, trusting space where participants can freely express themselves on both a non-verbal and verbal level. Dance/movement therapy approaches patients with a holistic perspective, treating the physical, emotional, social, and cognitive functioning of the individual. For those patients with a medical diagnosis, not only are they experiencing a physical trauma of the disease and its treatment, but they are also attempting to cope with associated life stressors. Providing a medical patient an alternative channel to express fears, anxieties, hopes, and stresses, in addition to reconnecting with her body, can improve the quality of life, reduce the sense of isolation, and decrease the negative psychological reactions. Other alternatives to psychosocial interventions may not be able to wholly treat the individual; similarly to the medical treatment, the intervention may only help to ameliorate one aspect of the entire experience.

Table 1 summarizes the psychological responses of women diagnosed with gynecologic cancer divided into empirical and non-empirical research. Data showed that women experienced anxiety, depression, fatigue, pain, isolation, decreased sexual functioning, and alterations in body image. The side effects resulted from the cancer, as well as the medical treatments for the disease. The information was then formatted into a summary section by topics (Table 2). Multiple authors found that support systems were necessary for the patients to develop coping skills to handle the demands of the disease

and treatment. Positive reframing and acceptance are essential skills to empower the patient to assert herself during the treatment process and adapt to the changes in her life.

Research shows that quality of life (QOL) was affected more by patient demographics, such as marital status and employment, than the stage of disease and treatment (Bradley et al., 2006). This suggests that providing a patient with a support system, within a group intervention, could provide the resources to develop adaptive coping styles that she may be unable to otherwise obtain. Additionally, symptoms were found to be present after initial treatment, and suggest that psychological treatment should begin around the time of diagnosis and continue after medical treatments have been administered.

Tables 3 and 4 are summaries of data related to mind-body therapies and their clinical utility for psychosocial treatment and symptom reduction. Table 3 is a compilation of empirical and non-empirical research, while Table 4 lists the emerging themes of the research. Various treatments exist that aim to provide the patient with methods for pain control, emotional expression, and relief from anxiety, depression, and isolation. The research points to the need for oncology patients to have a holistic treatment to combat the negative physical, emotional, and social effects. However, few interventions included a combination of techniques to treat all facets of the patient's experience. Published works further develop the theory of the psychoneuroimmunological model, and its relevance for treatment of patients with a medical diagnosis. The connection between mind and body are illustrated in multiple methods of interventions, including the use of relaxation techniques and guided imagery. The theme emerges that treating a patient on a psychological level can have a ripple

effect into their physical response to the disease and its treatment, as well as social functioning, and vice versa. Additionally, a common thread was the need for support systems in the rehabilitation of patients with a medical illness.

Table 5 outlines the techniques found in DMT interventions, and the purpose of their inclusion. Dance/movement therapy combines various tools to provide a holistic treatment. The terms used for the techniques may be slightly different than those found in other research, however, the underlying assumptions and goals are the same. Using the breath in DMT is related to the relaxation response and accessing emotions; verbal processing allows the participant to discuss the movement itself, in addition to the emotional experience; empathic reflection has the similar quality of support based on a trusting, caring, empathetic relationship between therapist and client.

Tables 6 and 7 are a compilation of data specifically for DMT's efficacy in clinical treatment. Findings report decreases in anxiety, depression, negative self-esteem, and isolation, as well as improved body image. Strong support exists for DMT's ability to provide a safe atmosphere for patients to express their emotional and physical fears and anxieties. Changes were found on a physical, social, emotional, and cognitive level, further strengthening the theory that DMT is an appropriate treatment for medically involved patients, as it treats the "whole" individual. Dance/movement therapy's positive effect on various factors parallels the needs of gynecologic cancer patients.

The following vignette developed from an ongoing outpatient support group at Hahnemann University Hospital. The group was typically comprised of 3-5 patients with various diagnoses and ages. A pseudonym was used, and other non-essential information changed, to protect anonymity.

5.2 Case Vignette: Dee

Dee is a 38-year-old female diagnosed 9 years ago with ovarian cancer. Dee joins the group as the youngest participant, single with no children. Dee has a strong personality, with an assertive tone, and a great sense of humor. Dee had a full hysterectomy when she was first diagnosed and is currently receiving chemotherapy to continue treatment. Dee has never attended a support group but was intrigued by the idea of DMT. When Dee first joined the group, she swiftly took the lead. She provided feedback and support for other patients, but had a tendency to consume a lot of the group's time. The main topics of her discussions were her religious faith, her strength in coping with the disease, her attitude, and her independence. Dee prided herself on not needing anyone's help during her diagnosis and treatment. However, she had hoped to be an inspiration to others and was open to receiving feedback from the group members.

On a movement level, Dee preferred the sagittal and vertical planes, associated with decision-making and sense of self. She had limited movements in the horizontal plane, which is connected with relating to others. Dee's gestures and postures were very Quick and Direct, not showing much indulgence of time; in addition, Lightness was almost absent from her movements. Dee's speech patterns mirrored her physical affect. She was very quick to interrupt others, and there was strength to her words, coupled with

the loud volume of her voice. She had no fear directly addressing, and perhaps challenging, anyone in the group, whether she had met them before or not.

The goals for Dee were to expand her movements to incorporate the horizontal plane, and find a balance of more indulging movement qualities. The information that Dee typically shared with the group implied that she was protecting herself from more pain and anguish. She built up a strong emotional barrier to keep others at a distance, leaving herself isolated and alone with her fears and anxieties. Throughout a few sessions, the groups began with a similar warm-up as outlined above. The members participated in shared leadership exercises to experience taking a leading role, as well as being witnessed and supported by others. Exercises that followed included movement into the horizontal plane, reaching and connecting with other patients, and incorporating Light and Strong pressure. Verbal processing allowed the patients to discuss the feelings associated with various movements in the body and experiences of seeing others take on their movement qualities.

After several weeks, Dee began to share her emotions in regards to her diagnosis and desire for support. She became more receptive to feedback from the other members in the group, and interrupted others less. Unbeknownst to her, Dee joined the group for what was her last session. At this session, she openly discussed her sadness for not bearing children, her loneliness due to a lack of intimate relationships, and her decreased feelings of sensuality and femininity. The group members asked to use scarves during the body of the movement exercises. They all supported Dee and followed her lead with light and sustained movements, moving in and out of the circle, and towards each other. The group ended with the members holding hands, and each member stating a positive

thought or feeling they had towards Dee. As the group separated, Dee thanked each participant and hugged them on her way out.

A few weeks later, the therapist met Dee in the hospital wing. She did not move as quickly as she had when they first met, and her speech was less pressured. She asked about the group, and warmly reflected on her last meeting with them. Dee expressed a sense of feeling less isolated as well as more open to the support available from others. She had hoped to join the group again, but has been unable to because of current medical treatments.

This case vignette illustrates the benefits of a strong social network in supporting a patient's ability to explore their emotional needs during a medical diagnosis. Through a physical and social exploration, Dee was able to gain insight into parts of herself that she had suppressed during her treatments.

The issue of termination was not available during Dee's intervention; however, it is essential to bring this into the sessions in weeks 7 and 8. Termination can be anxiety provoking for the members of the group, and it should be dealt with in a safe environment. This theme may also present itself during the spontaneous movement exercises, so the therapist needs to remain aware of this.

5.3 Limitations of the Study

Minimal research has been conducted or published to describe the gynecologic cancer patients experience during HDR brachytherapy treatment. The intervention designed is based on information gathered about the psychological responses associated with the diagnosis and treatment options. With more research information, the intervention may be further developed specifically for the experience of HDR

brachytherapy treatment. Additionally, the intervention is based on a closed session group with female patients at the same point of treatment. It can be used for different stages of treatment, but needs to be considered by the leader in order to potentially reorganize the exercises and techniques.

5.4 Recommendations for Future Research

As previously expressed, additional research needs to be conducted to gather qualitative data for women undergoing HDR brachytherapy. Anxiety and depression are significant responses to the treatment process, however, additional reactions need to be researched. A survey of female patients before, during, and after their HDR brachytherapy treatment would provide information useful in further developing the clinical intervention (Marc Micozzi, personal communication, February 20, 2007).

Patients with other diagnoses, such as breast cancer or prostate cancer, also receive HDR brachytherapy. The effects of anxiety and depression associated with the procedure are similar, though the psychological responses may be varied. It would be useful to compile research information related to other diagnoses and modify the intervention to be utilized with those populations. Chemotherapy has similar responses of physical and psychological symptoms, as well as treatment specific limitations. The intervention could be adapted for patients receiving chemotherapy.

Researching the effects of DMT for patients with gynecologic cancers would be useful to further support the implementation of such an intervention. A study gathering qualitative, quantitative, or both types of data could utilize such tools as the Profile of Mood States, Beck Depression Inventory, or open-ended interviews. This research could be based on a

case study, or, if feasible, a larger sample of participants with an experimental and control group to develop baseline measurements. Measures of anxiety and depression, coupled with qualitative data, would provide valuable information to modify a more specific intervention.

CHAPTER 6: SUMMARY AND CONCLUSIONS

Inclusion of a psychosocial intervention in the oncology treatment plan has shown a positive impact on the adverse psychological responses associated with a cancer diagnosis and its treatment. A diagnosis of gynecologic cancer disturbs the life trajectory the patient is currently following, and she is forced to rethink future plans, with fear that the future may not be of great length. Fortunately, studies have found that psychosocial interventions can have a profound affect on quality of life, as well as quantity. Research covering various types of gynecologic cancers shows that social support positively correlates to adaptive coping skills, decreased depression, anxiety and stress, and increased self-esteem and body image. Furthermore, better adherence to one's medical treatment plan, a pro-active stance, can provide better outcomes to treatment.

Dance/movement therapy's holistic approach uniquely allows participants to explore their emotional, social, cognitive, and physical selves. Dibbell-Hope's study in 2000 was motivated by the belief that, intuitively, it would seem that a trauma to the body should be treated with a body-oriented therapy (Dibbell-Hope, 2000). Successful outcomes have been measured for DMT based interventions in the medical field, even for brief interventions. The underlying goal of this 10-week intervention is to create a psychologically safe environment for gynecologic cancer patients, integrating the various techniques that have proven to be effective in psychosocial interventions and DMT based interventions. By building a social support system early on in the patient's treatment plan, the hope is that adaptive coping skills and emotional expression will allow the patient to combat the potential decrease in quality of life found in most studies. Future research is encouraged to modify this intervention as needed; however, the groundwork has been

laid for a viable opportunity to address the emotional needs often ignored in the medical treatment of gynecologic cancer patients.

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Appendix A: US Statistics (2006) for New Gynecologic Cancer Cases

Types of cancer	Estimated new cases
Cervical (uterine cervix)	9,710
Endometrial (uterine corpus)	41,200
Ovary	20,180
Vulva	3,740
Vagina and other genital	2,420
Total estimated cases diagnosed in 2006	77,250

Adapted from the American Cancer Society's, Cancer Facts and Figures 2006.

Appendix B: Glossary of Effort Terms

Flow

Free Flow: agonist muscles move relatively unopposed by the antagonist muscles;
a mobilization and release of tension.

Bound Flow: the antagonist and agonist muscles are contracting, tightening,
constraining, and restricting movement.

Weight

Strong: contending with weight and gravity. One can gain a sense of one's own
power and authority when using strength effectively.

Light: a buoyant attitude and spring-like motions.

Time

Quick: fighting time and moving rapidly.

Sustained: indulging in time, slowing down.

Space

Indirect: an indulgence in free form, traversing planes, and freely shaping in
space.

Direct: space being divided along one plane. Focusing on one point and attending
to it in a precise way.

Adapted from Amighi, J.K., Loman, S., Lewis, P., Sossin, K.M. (1999). *The meaning of movement*. New York: Brunner-Routledge.

Appendix C: Bartenieff Fundamentals

Exercise	Purpose	Instruction
Rock and Roll	To establish the heel (grounding)-pelvic connection	From a supine position, legs are extended, arms extended alongside the body. Initiating movement with the ankle, point and flex the feet, creating a rhythmical rocking motion.
Pelvic Forward Shift	Mobilizing weight by using the pelvic shift and pelvic floor. Establishing the heel-pelvic connection.	Lying on the back with knees bent (feet on the floor), arms are extended alongside the body. Raising the pelvis, shift the weight up and forward (toward the feet). Reverse the movement, drawing the weight up and away from the feet.
Knee Drop	Establishes heel-coccyx connection, in addition to upper body and lower body movement.	Starting in the same position as Pelvic Forward Shift, extend the arms creating a "T". Palms spin down to the floor, feet are fully connected to the floor and the heels are in line with the sitting bones. Allow the knees to drop towards the right side, as weight shifts to outer edge of right foot, and inner edge of left foot. Pause and exhale. Initiating with the tailbone (coccyx) and no abdominal tension, draw knees back to center. Pauses before moving to the other side. Reserve active movement for the return to starting position, and passive motion for the release of the knees.
Diagonal Situp	Initiating movement of the upper body with support from the lower body.	Same starting position as Knee Drop (arms extended straight out). Move through a knee drop to the right, as the left arm naturally moves into the diagonal. Pause and then move the left arm in a counter-clockwise circle (above head and around), with the gaze following the left hand. Pause when the hand returns to initial starting position, and then reverse the circular movement. Repeat on the other side. Gradually increase the reaching motion, so the torso moves into a twisted seated position.

Adapted from Bartenieff, I. & Lewis, D. (1980). *Body movement: Coping with the environment*. New York: Routledge.

Table 2

*Summary of Psychological Responses***Authors who found that anxiety, depression, anger, and isolation are key psychosocial stressors of gynecologic cancer and its treatment**

Ashing-Giwa et al., 2004

Bradley et al., 2006

Fawzy, 1999

León-Pizzaro et al., 2007

Lutgendorf et al., 2002

Noor-Mahomed et al., 2003

Authors who found that quality of life was negatively impacted by a gynecologic cancer diagnosis and treatment

Ashing-Giwa et al., 2004

Bradley et al., 2006

Greimel et al., 2002

Hawighorst-Knapstein et al., 2004

Klee et al., 2000a

Wenzel et al., 2005

Wenzel et al., 2002

Wenzel et al., 2003

Authors who found that social support systems are positively related to how well a patient copes with gynecologic cancer and treatment

Ashing-Giwa et al., 2004

Bradley et al., 2006

Greimel et al., 2002

Juraskova et al., 2003

Lutgendorf et al., 2002

Noor-Mahomed et al., 2003

Wenzel et al., 2005

Wenzel et al., 2003

Authors who found that decreased sexual functioning, low self-esteem, and body image issues are related to a gynecologic cancer diagnosis and treatment

Ashing-Giwa et al., 2004

Fawzy, 1999

Hawighorst-Knapstein et al., 2004

Juraskova et al., 2003

Noor-Mahomed et al., 2003

Wenzel et al., 2005

Wenzel et al., 2002

Wenzel et al., 2003

Table 2 (continued)

Authors who found that pain, fatigue, and other physical problems are typical side effects

Fawzy, 1999

Klee et al., 2000b

León-Pizarro et al., 2007

Lutgendorf et al., 2002

Wenzel et al., 2003

Authors who found that adaptive coping styles, positive reframing, and acceptance were essential in dealing with the psychosocial stressors

Juraskova et al., 2003

Klee et al., 2000a

Lutgendorf et al., 2002

Wenzel et al., 2002

Wenzel et al., 2005

Table 7

*Summary of Clinical Utility of Dance/Movement Therapy***Authors who found that DMT can positively treat the patient's experience of anxiety, depression, quality of life, and/or fatigue**

Aktas & Ogce, 2005
 Brooks & Stark, 1989
 Cruz & Sabers, 1998
 Dibbell-Hope, 2000
 Erwin-Grabner et al., 1999
 Ho, 2005
 Sandel et al., 2005
 Serlin et al., 2000

Authors who found that DMT improved a patient's sense of self and/or body image

Cohen & Walco, 1999
 Cruz & Sabers, 1998
 Dibbell-Hope, 2000
 Ho, 2005
 Sandel et al., 2005

Authors who suggest that DMT can provide a safe environment for patients to explore their bodies and emotional experience

Aktas & Ogce, 2005
 Dibbell-Hope, 2000
 Goodill & Morningstar, 1993
 Ho, 2005
 Mendelsohn, 1999
 Sandel et al., 2005

Authors who found that DMT decreases isolation and/or hopelessness/helplessness

Aktas & Ogce, 2005
 Cohen & Walco, 1999
 Dibbell-Hope, 2000
 Ho, 2005
 Serlin et al., 2000

Table 7 (continued)

Authors who found that DMT elicits positive changes on physical, social, and emotional levels

Aktas & Ogce, 2005

Goodill, 2005

Ho, 2005

Authors who suggest that DMT enables a patient to develop positive coping skills (including mastery over one's situation and demands)

Cohen & Walco, 1999

Erwin-Grabner et al., 1999

Goodill & Morningstar, 1993

Sandel et al., 2005

Synthesis of the Literature

The most prominent psychological responses to a gynecologic cancer diagnosis and its treatment are anxiety, depression, isolation, decreased quality of life, and negative changes in body image and self-esteem. Emerging from the data are clues to an intervention that can specifically address these psychosocial and psychological effects. A large percentage of participants in multiple studies reported that at the time of diagnosis, and 5-10 years post diagnosis, they would be willing to participate in psychosocial interventions to alleviate the negative repercussions of their illness (Juraskova et al., 2003; Wenzel et al., 2005; Wenzel et al., 2002). Research on mind-body interventions show an increased capacity for these types of approaches to positively treat anxiety, depression, quality of life, as well as quantity of life (Spiegel et al., 1989). Combining the key elements, such as breath work, group support, imagery, new coping skills and resources, and physical exercises, DMT constitutes a treatment modality to treat the whole individual. Within the field of DMT, the holistic integration of techniques contains the necessary ingredients effective for treating gynecologic cancer patients on all levels of functioning. Positive coping skills, reframing, acceptance, and social support, inherent in DMT, have been linked to better quality of life, and increased adherence to medical treatments and decreases in medical visits and costs. To successfully treat gynecologic cancer patients, all of these factors must be present as the psychoneuroimmunological model shows that the bilateral relationship between mind and body affects long-term outcomes.

Chapter 5: Discussion

Based on a review of the current literature, the following intervention was developed to provide psychosocial treatment for gynecologic cancer patients after initial diagnosis until completion of high dose rate (HDR) brachytherapy. Various sources present data concluding that treatment for psychological stressors should begin as soon as possible, and continue even past treatment completion (Ashing-Giwa et al., 2004; Dibbell-Hope, 2000; Fobair, 1997b; Hawighorst-Knapstein et al., 2004; Juraskova et al., 2003; Lutgendorf et al., 2002; Wenzel et al., 2002; Wenzel et al., 2005). Psychological symptoms, such as reactive depression and anxiety, can present themselves immediately following diagnosis, and persist far after cancer treatment has been terminated.

Introducing an intervention in the early stages of the oncology patient's experience provides resources that can be utilized for as long as necessary. This intervention will specifically focus on approximately the first 10 weeks, from diagnosis, through external beam radiation treatment (EBRT), and HDR brachytherapy (one possible option for treatment in cases of gynecologic cancer).

The experience of gynecologic cancer patients being treated with EBRT and HDR brachytherapy has not been thoroughly researched. Therefore, the goals and intervention were developed in response to healthcare professionals' concerns and information compiled in Table 1 on the psychological responses related to gynecologic cancers. Results of dance/movement therapy (DMT) studies have provided encouraging evidence to utilize techniques such as imagery, relaxation exercises, and spontaneous movement in group environments. Coupled with Yalom's (1995) theories on group process, the

intervention is based on a group setting to provide therapeutic factors such as instillation of hope, universality, altruism, and information sharing (Yalom, 1995).

The goals of the intervention are: 1) to build communication and interactional skills through social support; 2) increase the women's sense of self and body awareness; 3) to improve self-esteem and body image; 4) learn relaxation and guided imagery techniques to utilize in stressful situations; 5) develop coping skills to handle life stressors; 6) be spontaneous and have fun; 7) increase the capacity to verbally and non-verbally express one's fears and anxieties; 8) begin one's healing process.

Goodill (2005) wrote that coping and self-efficacy are necessary components to the DMT treatment plan for oncology patients. Through social support, and an increased ability to communicate, patients will feel more empowered to assert themselves during medical treatment, and better adhere to the treatment plan. Patients can develop ways to form a new life trajectory (Fawzy & Fawzy, 1997), while familiarizing themselves with their new bodies and abilities. The optimal healing plan occurs within a safe environment, and trusting relationships, where patients are free to discover movements and images for their own healing (Serlin, 2007).

Dance/movement therapy incorporates the use of the physical body (within one's own personal limitations) to become more connected to one's own body, increase body image, and use one's own resources for personal healing (Dibbell-Hope, 2000; Halprin, 2000; Ho, 2005; Serlin et al., 2000). Relaxation and guided imagery techniques are tools that the patient can use outside of the intervention sessions. Other coping skills that the patient can identify may be utilized in other stressful situations. Serlin and colleagues (2000) write that facilitating active coping is the responsibility of the therapist. Patients

may feel hopeless about their situation, and strategies need to be developed to improve their situation (Serlin et al., 2000). For instance, coping strategies to be encouraged are about becoming more involved in one's treatment, understanding the illness and its effects, and taking measures to deal with the disease (Serlin et al., 2000).

Through symbolic movement, patients can better understand their own experience and response. Symbolic non-verbal expression of thoughts too difficult to verbally discuss “form the bridge between the patient's internal and external worlds as they transfer energy from one realm to the other in a social context” (Schmais, 1985, p. 33). This process will strengthen the mind-body connection, which can improve the patient's self-perception throughout the treatment process. Verbally processing the experience within the group—activating the here-and-now process (Serlin et al., 2000)—will help the patient cognitively explore the emotional process and find support from others with related experience. Peer support enables a patient to reexamine the meaning of her own life (Fobair, 1997a), thus beginning the healing journey.

The intervention has been developed to focus on the psychosocial and psychological issues of the female patients to facilitate the healing process. The sessions will be held on a weekly basis for 90 minutes, in a closed group format. The preference would be for the group to meet outside of the hospital setting where treatment is occurring; however, due to scheduling issues, this might not be feasible. The session is meant to be in a comfortable space, with enough room for the patients to move around without obstruction. One of the most significant factors is creating a psychologically safe environment for the participants to build a new community (Fobair, 1997a). In the chaos of a medical diagnosis, stability and balance can enhance a patient's personal experience.

With this idea in mind, the DMT intervention will begin and end in roughly the same format for every meeting of the group. The opening and closing exercises will create boundaries containing the group and providing a safe atmosphere. The middle section of a DMT session is for theme development, and themes in this proposed program will differ from week to week.

Following is a description of the warm-up and closure, and after that, a detailed description of the weekly themes. Figure 1, following these descriptions, shows the program sequence in tabular form.

Warm-up

As the group comes together, the group leader will inquire about how the patients are feeling on a physical level that day to determine the extent of the movement process of the group. A verbal check-in will allow the patients to share any experiences, emotions, fears, and anxieties. Time will be allotted to encourage the patients to interact verbally to build the relationships beneficial to group process. Serlin (2007) notes “through dialogue, the loneliness of carrying the illness alone is reduced” (p. 83). During this process, the therapist should engage in active listening. Halprin (2000) discusses the exercise of active listening as a way to cultivate an empathetic relationship with the patients.

Ways for the therapist to actively listen include: 1) listening to the words as well as the tone of the voice; 2) observation of the speaker’s body language; 3) avoidance of making judgments or giving advice; 4) being fully present with active attention; 5) reinforce one’s presence by giving feedback for what is being said and witnessed (Halprin, 2000). Enabling the patient to fully express herself allows the participant to

become engaged in the group process and develop intimate relationships with her peers and therapist to establish a support system. Multiple authors have suggested that having a strong support system is beneficial to better coping with one's illness (Ashing-Giwa et al., 2004; Bradley et al., 2006; Dibbell-Hope, 2000; Juraskova et al., 2003; Klee et al., 2003; León-Pizzaro et al., 2007; Lutgendorf et al., 2002; Serlin et al., 2000).

Following the verbal check-in, deep breathing exercises will be initiated to encourage the patients to focus on themselves. The intention is to promote a sense of grounding within the group setting and help to develop a stronger sense of self and mind-body connection. Deep breathing exercises used in the warm-up will also be available to the patients during any treatments as a relaxation technique. In addition, breathing exercises help the patient to switch gears from a listening mode to a feeling mode (Halprin, 2000).

The patients will be asked to complete an internal scan of the body, moving from the head to the toes, to increase awareness of any sensations or tensions held in any part of the body. The goal of this technique is to increase the mind-body connection by creating tools to become more aware of the physical self. With a keener sense of internal awareness, the patient may be better prepared to communicate with her doctors about any changes occurring on a physical level.

After the internal scan is completed, patients will begin light stretching. The exercises will move from the head to the feet to start to enliven the body. Krantz (2005) discusses the defenses potentially utilized during a cancer diagnosis, such as "repression of thoughts and emotions and dissociation of traumatic experience" (p. 3). Use of such defenses may result in constrained expression and action (Krantz, 2005), so moving

through isolated exercises from the head down aims to ease the patient back into her own body. The movements will be coordinated with breathing exercises in order to reinforce the connection between mind, body, and spirit. Such exercises will include, but not be limited to, neck rolls, shoulder circles, circling of the wrists and ankles, torso side bends, spinal twists, toe reaches, and leg stretches. Additionally, the patients will work with tensing and releasing of the muscles.

Closure

As the session draws to a close, the patients will settle back into their own bodies by moving through a sequence of deep breathing. The patients will be encouraged to allow the exhalations to release any remaining tension or anxiety that they may still be holding. As the body becomes more relaxed, a guided imagery exercise will be introduced to connect a positive image to the relaxed physical state. The imagery exercises will contribute another resource for the patients to adopt during other stressful life situations. The group will end with a final verbal check-in to elicit feedback from the experience. Patients will be able to explore any physical sensations and emotional reactions to the group that day. As feelings emerge through the movement process, the patient needs to take the time to evaluate the experience, draw parallels to other experiences in her life, and receive feedback from others (Schmais, 1985). Giving verbal symbols encourages reflection on the internal state.

Because of the sensitive material that can surface during a DMT session, the therapist will encourage the patients (after uncensored discussion) to end the session on a positive note. This may allow the patient to leave the fears, tension, anxiety, and worries

within the group environment boundaries, and find a way to celebrate their new bodies and new relationships. A technique that this researcher has used is to have the group take a full inhalation together and imagine drawing in the positive energy, compassion, and kindness from the group experience. On the exhalation, the members are asked to leave something positive and caring behind for all the other individuals to carry with them.

Both the warm-up and closure are meant to create a ritual or ceremony to provide consistency within the group. A new community founded on these rituals can then begin to flourish.

5.1 Dance/Movement Therapy Intervention

Week 1: The session will begin with the warm-up outlined above. As this is the first group session, extra time should be taken to allow for the patients to introduce themselves and get to know the other members of the group. This first session helps to establish a trusting relationship and build a safe environment where members feel comfortable exploring their emotional experiences. After the body warm-up, the remainder of the session will be structured. The rationale is that members may not immediately feel free to expose themselves, perhaps then increasing their sense of vulnerability. Spontaneous movement exercises will be added to the intervention in later weeks.

An additional reason to base the first week on structured movement is that the therapist will then be able to assess the abilities of the patients—strengths and weaknesses. The therapist will gain a better understanding of each individual's movement capacity and emotional attitude (Sandel et al., 1993). If feasible, the patients will leave

their chairs and will remain in a circle. The therapist will guide the members through movements to encourage synchronicity within the group. Through synchronous movement, the members may then begin sharing rhythm, Efforts (refer to Glossary), and spatial usage, which can lead the group towards a sense of solidarity (Schmais, 1985). Building this unity in the initial sessions will set a precedent for the remainder of the intervention.

The use of Weight in the movement sequences will develop the members' sense of self and grounding. Dance/movement therapy suggests that balancing the Efforts in the Weight category (Strong and Light) will encourage a patient's ability to assert oneself (Amighi et al., 1999). The therapist will lead the patients to move in all three planes, each of which is associated with certain aspects of behavior. Movement in the sagittal plane is related to decision-making; use of the horizontal plane is about communication with others; and finally, the vertical plane associates to one's relation to oneself (Amighi et al., 1999). For example, the therapist can suggest the connection of the feet to the earth utilizing opposing forces. Movements can include stomping the floor, and lightly tapping the toes. This engages the vertical plane, and provides insight into the preferences of the members. To move within the horizontal plane, using weight, and building trust, the circle will connect by pressing palms together and tensing and releasing the pressure of the connection. Moving towards and away from the center of the circle will incorporate the sagittal plane and may be done by using strong or light qualities in the steps for either direction. Throughout the movement process, the therapist will take an opportunity to reflect each individual's movement, and acknowledge their unique identity. This will enable the therapist to develop a personal relationship to each member.

An additional way of developing a ritual and setting the foundation for relationships can be the creation of a brief “routine” with choreographed steps. This will become a work in progress to continue to the end of the intervention with each individual’s contribution. The session will end with the closure previously discussed. The verbal processing will provide the patients with an opportunity to reflect on their experiences, and perhaps, set goals or share fantasies for how they imagine the group will progress. The therapist will remind the patients to practice the breathing and imagery exercises to begin preparation for their upcoming medical treatments.

Week 2: During the verbal check-in, the therapist will ask the participants to share their reactions to the previous week’s sessions. The themes that may emerge from this discussion can then be used within the session to enrich the group experience. After the members complete their warm-up, the group will move into a circle. From here, the therapist will invite the members to share leadership. This will help to maintain the sense of individuality of each group member, while encouraging the individual to be seen and heard by others. By sharing leadership, those who may typically remain quiet can practice taking the lead and communicating on their own behalf. Each individual will contribute a movement for all the members to “try on”. As the group moves together, the encouragement of synchronicity will “transform the process of unfolding so that it no longer belongs to one individual alone, but to the entire group” (Schmais, 1985, p. 20)

Upon completion of the shared leadership, the therapist will guide exercises based on the Time Effort. Quick movements will be counter-balanced by slow and sustained movements. During the treatment for cancer, there may be a sense of losing time. Not only has the longevity of one’s life been threatened, but also the chaos of appointments

and treatments that ensue may make it difficult for the patient to take the time to process the experience. Finding a balance between active, rapid movement, and indulging in time, may enable the patient to cope better with the treatment process. The therapist should offer movements initially in isolated body parts, for example, Quick followed by Sustained movements in the arms and hands progressively moving down towards the feet. Then, the body parts can be integrated into whole body movement experimenting with the Effort of Time.

The group will conclude with the choreographed routine. This week, another movement will be added on, by suggestion of the group members. After modifying the routine and rehearsing it, the group will move into closure for the week. Participants will be asked to share their experience for that week, and once again be reminded to practice their breathing and imagery exercises.

Week 3: This week's intervention is geared towards developing a sense of body awareness, body boundaries, and increasing self-esteem. The group will move through the verbal check-in and warm-up. The stretching exercises will be followed by self-massage. The leader will guide the group to move from the head to the feet using massage to release any bodily held tension or stress. By incorporating self-care tips, the leader is providing another resource for coping. Self-care is an important aspect for an individual during cancer treatment. Additionally, this will help increase the awareness of the individual's physical sensations and mind-body connection. This will help the women become familiar with their new bodies and re-establish body boundaries that may have become blurred during the initial stages of diagnosis and treatment.

The use of Bound Flow and Free Flow will complement this exploration of bodily held tensions. Participants will experience the opposing forces of tensing and releasing body parts, and find new resources, such as the breath and self-massage, to ease physical tension and stress. The majority of this session will be focused more on the individual; however, the group will come together to practice their routine before closure. The hope is to provide the patient with the understanding that she can find ways to take care of herself, but can also rely on group support.

The leader will introduce the Bartenieff Fundamentals—a set of exercises that build an awareness of the heel-coccyx connection, fingertip-scapula connection, pelvic-hip action, and body half connection. The series of exercises will encourage the re-connection with the pelvic area—the locus of concern—and the exercises can be reserved for additional usage after treatment has been completed. The exercises include the Rock and Roll, Knee Drop, Pelvic Forward Shift, and Diagonal Situp (refer to Appendix C).

The group will wrap-up with the rehearsal of the choreographed piece, with a new step or phrase added, as well as the closure sequence.

Week 4: The group has had three meetings to establish a relationship and build a new community. At this juncture, the patients have two more weeks of EBRT, but are preparing for the HDR brachytherapy. The patients may be developing advance anxiety related to the procedure. The goal for this week is for the participants to use spontaneous movement for emotional expression. In addition, the patients will work in dyads to give support to others in addition to receiving. The group will move through the warm-up as usual, and then will pair off to work with empathic reflection (mirroring exercises). One member will initiate movement that will be reflected by the other member of the pair.

The dyads will be encouraged to fully take on the qualities of the mover's experience. The use of Space will be introduced, so the participants can explore the use of Direct and Indirect movements, in addition to the previously learned Effort qualities. Working through spatial dimensions allows the mover to practice having multiple foci or singular foci. This technique will be useful during the limited mobility during HDR brachytherapy, as the patient will want to practice singular focus with guided imagery to relieve the anxiety.

The use of mirroring, or empathic reflection, strengthens the feelings of being supported or supporting another individual. As Yalom (1995) mentions, group process elicits a sense of altruism, and the work in the dyads parallels the giving and receiving. The mover's self-esteem may increase as she gains support from a peer. Through self-esteem, one may be more willing to "reclaim those parts of herself/himself that were hidden from others" (Schmais, 1985, p. 29). The process is bilateral as an increase in self-esteem may result in heightened body awareness, and vice versa. Each participant will have an opportunity to move and have her movement reflected, increasing and impacting the here-and-now experience.

In order to reinforce the sense of group support, a stretch cloth will be introduced for the group's use. The members can manipulate the stretch cloth by using different intensities of one's own body weight. By reflecting back on the effort of Weight, the individuals can establish a stronger sense of self and grounding, which will be beneficial as they move into the isolation of HDR brachytherapy treatment. To continue building group cohesion, the group will come together to move through their routine and end with the closure sequence.

Weeks 5, 6, 7, and 8: These four sessions are meant to ease the participants through the transition of EBRT to HDR brachytherapy. During this time, the body of the sessions will continue to expand on the previously used elements of movement, but also incorporate spontaneous movement. The goal is for the patients to expand on their emotional expression through symbolic movement. The symbolic expression of unspoken thoughts gives form to the mover's fears and anxieties, which can then be addressed and transformed (Serlin, 2007). To transition from a more structured group to a less structured group, props will be incorporated, utilizing the technique of kinesthetic imagining. Through the use of props, the anxiety and vulnerability, perhaps experienced through movement, may be decreased. The props may act as a transitional object, allowing the patients to safely move from a structured movement sequence to a more independent expressive action. For instance, scarves may elicit associations with femininity. The movement elicited with a scarf is often slow, sustained, and flowing. Introducing the scarves into the women's movement ritual may help them to move through their fears of loss of femininity and sexuality through an external object. On a physical level, practicing the slow and sustained movements increases the mover's ability to indulge more in time and become more aware of her body in space. Increasing body awareness and body image will enhance the mover's ability to connect with her feminine side, which may have been suppressed during the trauma of the diagnosis.

In addition to the final sequence for closure in Weeks 7 and 8, the therapist needs to bring awareness to the nearing termination date of the intervention. The participants have been working through fears of loss and grief, so it is essential that they prepare for the final closure to the group.

Week 9: As the intervention nears its end, the verbal check-in of the session should reiterate the termination process and the available resources the patients can utilize outside of the group. The warm-up exercises, both breathing and stretching, should be reinforced as skills that may be drawn upon at any time. The body of the group should include spontaneous movement expression, with the availability of props. If the members seem to be having difficulty focusing on their individual needs, perhaps an Authentic Movement sequence can be introduced. In this technique, an observer witnesses the mover. The individual mover will be supported and seen by another, who can relate to the stressors that are being experienced. Feedback will be exchanged in the dyads, enabling the mover to begin a dialogue about the experience. After each member has moved and witnessed, the group will come back together to share their individual experiences. To re-establish the group as a community, the members will, again, move through their self-created dance routine, and follow the closure series.

Week 10: The final session should provide a fun environment, supporting the positive experiences that emerged during the 10-week intervention. The goal of the therapist is to send the members off with joyful memories, new coping skills and resources, and a greater sense of their own bodies. Upon completion of the warm-up, the body of the session should be a fun and spontaneous experience in celebration of the work that has been done during the intervention. This should be an unstructured sequence, where the members are free to move in connection to their impulses. In addition to the group routine and closing sequence, the technique previously mentioned in the closure section, should be incorporated. As a group, the members will close with deep breathing exercises, imagining the inhalation drawing in the positive experience of

the group sessions, and the exhalation leaving something positive behind. To end the group with a focus on the individual, each member will have the opportunity to vocalize the most significant aspect they experienced. The leader should note at the end that continuing DMT could be beneficial to cope with any delayed responses to the treatment. Figure 1 displays the complete ten-week intervention in tabular format including the themes, techniques based on the goals for the group.

Table 1

Psychological Responses Associated with a Gynecologic Cancer Diagnosis

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<i>Empirical research</i>				
<p>Ashing-Giwa, K.T., Kagawa-Singer, M., Padilla, G.V., Tejero, J.S., Hsiao, E., Chhabra, R., et al. (2004). The impact of cervical cancer and dysplasia: A qualitative multiethnic study. <i>Psycho-Oncology</i>.</p>	<p>Qualitative study utilizing key-informant interviews and focus groups to identify health related quality of life (HRQOL) in a culturally consistent framework. Data analysis was based on content and theme analysis.</p>	<p>51 subjects from four major ethnic groups (African American, Asian American, Latina, and Caucasian). In addition, 23 key informants from the healthcare community were interviewed to compile information about the cervical cancer population.</p>	<ul style="list-style-type: none"> • The most significant and persistent concerns found among the subjects were: isolation, anxiety, depression, relationships and support from others; spirituality; quality of marital and intimate relationships; fertility; sexuality; womanhood; body image issues. • The diagnosis of cervical cancer, as well as the treatment, severely decreased HRQOL. • The focus groups highlighted the importance of family support, spirituality, and quality of medical care for recovery and coping. 	<p>“These survivors expressed a need for more resources specifically affordable follow-up medical care, research, patient advocacy and support groups” (p. 721). The psychosocial, relational, and body image issues identified show a unique aspect of gynecologic cancer stressors in a culturally relevant context. Recurring themes in the material include anxiety, depression, infertility issues, fear of death and dying, and social isolation. Visualization and relaxation were noted to help some patients promote healing. Social support was a common theme expressed from all ethnic groups.</p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Bradley, S., Rose, S., Lutgendorf, S., Costanzo, E., & Anderson, B. (2006). Quality of life and mental health in cervical and endometrial cancer survivors. <i>Gynecologic Oncology</i></p>	<p>Quantitative study, which gathered information on quality of life (QOL), mood, and demographics through questionnaires. Data were analyzed using Chi-square, Mantel-Haenszel tests, and one-way ANOVAs.</p>	<p>152 survivors of cervical and endometrial cancer; 89 healthy controls.</p>	<ul style="list-style-type: none"> • Significantly higher anxiety, dysphoria, anger, and confusion were reported among cervical cancer survivors than endometrial cancer survivors and healthy controls. • Through analysis of the reported measures and demographics, there was increased depression and mood disturbance found for unemployed and unmarried cancer survivors. Those living alone may be at higher risk for mental health difficulties. • Poorer quality of life was associated with continuing side effects. 	<p>The authors hypothesize that women who do not have someone to share their experience with may be at increased risk for lower reported quality of life, mood, and mental health. The authors suggest that healthcare professionals need be mindful of the psychological well-being specifically for women with cervical cancer who are unemployed or living alone.</p>
<p>Greimel, E., Thiel, I., Peintinger, F., Cegnar, I., & Pongratz, E. (2002). Prospective assessment of quality of life of female cancer patients. <i>Gynecologic Oncology</i></p>	<p>Quantitative study to compare the QOL of women with different cancer sites. The researchers used the EORTC QLQ-C30, cancer specific questionnaire, as well as the Quality of life index, and Karnofsky performance status scale.</p>	<p>248 females with ovarian, cervical, endometrial, or breast cancer.</p>	<ul style="list-style-type: none"> • During active treatment, the researchers found a high level of impairment in aspects of the overall QOL. Emotional functioning and role functioning, as well as global QOL, remained low from pre-treatment to one year after treatment was completed. • Initially following treatment, patients with gynecologic cancer had lower scores on physical functioning, but these increased over time. • At approximately the fourth cycle of treatment, physical, role and social functioning decreased significantly. 	<p>Based on the low scores found in emotional functioning and global QOL that remained for up to one year after treatment was completed, it seems that psychosocial treatment should begin around the time of diagnosis, and remain as an aftercare plan. The lower levels around the fourth cycle of treatment provide support for psychosocial interventions to begin early in the treatment process to help with the cyclical emotional reactions.</p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Hawighorst-Knapstein, S., Fusshoeller, C., Franz, C., Trautmann, K., Schmidt, M., Pilch, H., et al. (2004). The impact of treatment for genital cancer on quality of life and body image—results of a prospective longitudinal 10-year study. <i>Gynecologic Oncology</i>.</p>	<p>Quantitative data were collected pre- and post-treatment with questionnaires to measure QOL and body image. Quality of life consisted of physical and psychosocial health; marital and sexual status; and medical interaction. Data analysis was performed by Student's <i>t</i> Test and Pearson's correlation.</p>	<p>129 women with cervical cancer undergoing pelvic exenteration or a Wertheim's procedure.</p>	<ul style="list-style-type: none"> • QOL was significantly lower four months postoperatively on the physical and sexual scale, as well as the global score. • One year postoperative, QOL had improved, with reportedly less issues on the physical and psychosocial scale. In turn, the global score was improved. • On the other hand, one year postoperative, sexual problems were still significantly higher than other scales; additionally, lowered self-confidence, sexual uncertainty, and feelings of less attractiveness were pervasive for those receiving adjuvant therapy. 	<p>One year following treatment, the women in the study still suffered with body image and sexual issues. The treatment modality chosen for the individuals correlated with these measures. "Quality healthcare might therefore integrate more the patients' and families' perception of medical care before, during, and after surgery for genital cancer by providing information not only on somatic but also on psychosocial issues related to the treatment modality" (p. 403). Not only should the patient be informed, but should also be provided with psychosocial treatment options.</p>
<p>Juraskova, I., Butow, P., Robertson, R., Sharpe, L., McLeod, C., Hacker, N. (2003). Post-treatment sexual adjustment following cervical and endometrial cancer: A qualitative insight. <i>Psycho-Oncology</i>.</p>	<p>Qualitative study comprised of semi-structured interviews, conducted either via telephone or face-to-face. Data were analyzed using a coding system to identify themes. The NUD*IST software system was utilized for coding and searching.</p>	<p>20 women with cervical or endometrial cancer receiving surgery; surgery and brachytherapy; surgery and external radiotherapy; surgery and brachytherapy and external radiotherapy.</p>	<ul style="list-style-type: none"> • Subjects reported lowered self-esteem and poor body image. • For women who equated their femininity with their ability to bear children, results show a sense of loss of femininity and a fear of the negative impact on their intimate relationships. • High levels of distress were reported in relation to coping with the side effects of treatment. • Patients reported a need for support from others who had similar treatment. 	<p>"If psychological factors are contributing to health outcomes independently, rather than being merely confounded with physiological status, then psycho-educational interventions enhancing effective coping styles may be of significant value to patients and their partners as a part of general post-treatment care" (p. 275). Coping styles, although not formally assessed, are suggested to influence the patient's sexual adjustment and QOL. Additionally, the results indicated that psychological services might be necessary after initial healing is complete.</p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Klee, M., Thranov, I., & Machin, D. (2000a). Life after radiotherapy: The psychological and social effects experienced by women treated for advanced stages of cervical cancer. <i>Gynecologic Oncology</i></p>	<p>Quantitative data were collected via a QOL questionnaire, with additional specific questions. The questionnaires were completed three days before the end of the external beam irradiation, in addition to 1, 3, 6, 12, 18, and 24 months after treatment was completed. The data were analyzed by using graphic presentation.</p>	<p>118 women with cervical cancer, and 236 healthy controls.</p>	<ul style="list-style-type: none"> • Overall QOL may improve over time, but never reaches that of the control group. • The patients' plans for the future (coping) remain lower than the controls, but stable over time. • In the first 24 months, the patients scored very high in regards to concerns with the disease and its treatment. • The patients' perception of sharing worries with others remained lower than the controls for the entirety of the study. 	<p>The authors suggest that if the patients were to receive more information in regards to the difficulties and issues that may develop, they may be better able to cope with their new situation. In addition, healthcare professionals need to be aware of the impact experienced psychologically and socially. Because of the low score of patients sharing worries with others, one would hypothesize the need for a support system for the patient to develop better coping skills.</p>
<p>Klee, M., Thranov, I., & Machin, D. (2000b). The patients' perspective on physical symptoms after radiotherapy for cervical cancer. <i>Gynecologic Oncology</i></p>	<p>Quantitative data were collected with a QOL questionnaire, with additional specific questions. The questionnaires were completed three days before the end of the external beam irradiation, in addition to 1, 3, 6, 12, 18, and 24 months after treatment was completed. The data were analyzed by using graphic presentation.</p>	<p>118 women with cervical cancer, and 236 healthy controls.</p>	<ul style="list-style-type: none"> • Multiple side effects can develop during the treatment for cervical cancer. General symptoms include fatigue (tiredness), pain, gastrointestinal problems, urological symptoms, and gynecological symptoms. 	<p>The authors discuss the concept of fatigue for cervical cancer patients. Fatigue is an aspect of depression, and therefore may have a psychological background. Additionally, the physical state of tiredness may impact the psychological perspective of the patient. The patient's QOL may be severely impacted by the chronic or acute side effects developing from the treatment.</p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>León-Pizarro, C., Gich, I., Barthe, E., Rovirosa, A., Farrús, B., Casas, F., et al. (2007). A randomized trial of the effect of training in relaxation and guided imagery techniques in improving psychological and quality-of-life indices for gynecologic and breast brachytherapy patients. <i>Psycho-Oncology</i></p>	<p>Quantitative study to determine psychological interventions for patients undergoing brachytherapy. Sociodemographic data were collected, in addition to QOL information and anxiety and depression (HADS). Analysis was completed with ANOVA tests and the Fisher exact test.</p>	<p>66 patients; 32 in study group, 34 in control group.</p>	<ul style="list-style-type: none"> • The intervention included 45-50 minutes of treatment information as well as verbal processing (for both groups). The study group received training in relaxation and guided imagery. • The study group reported significantly lower levels of anxiety and depression. Additionally, a statistically significant decrease was found in the Body Discomfort Scale. 	<p>The authors found that supportive relationships with family and friends provided the patients with a better ability to effectively deal with their problems. The results show that the techniques taught to the patients significantly lower anxiety, depression, and body discomfort.</p>
<p>Lutgendorf, S.K., Anderson, B., Ullrich, P., Johnsen, E.L., Buller, R.E., Sood, A.K., et al. (2002). Quality of life and mood in women with gynecologic cancer. <i>Cancer</i></p>	<p>Quantitative study to collect data on QOL and mood for women with gynecologic cancers during their first year of treatment. Data were collected with a FACT-G questionnaire, POMS questionnaire, COPE assessment, and the Crowne-Marlowe Social Desirability scale. Data were analyzed using the Chi-squared test, Mantel-Haenszel test, and ANOVAs.</p>	<p>98 women with early stage or regionally advanced gynecologic cancers.</p>	<ul style="list-style-type: none"> • Anxiety and depression was elevated at one year for the regionally advanced patients (compared to healthy outpatients). • Fatigue was elevated at the end of the year for both groups. • QOL and mood scores were within range of the control group. • At the onset of the study, patients who utilized positive reframing and acceptance reported higher functional, emotional, and physical well-being, as well as higher overall QOL at one year. • Coping mechanisms, such as avoidance and disengagement, may hinder a patient's ability to develop adaptive coping skills. 	<p>“Greater seeking of social support at one year was associated with better concurrent social well-being and doctor-patient relationships...continued disengagement at one year was associated with poorer concurrent QOL and greater distress” (p. 131). A support network in the early stages of treatment may provide the patient better use of their own resources to develop adaptive coping skills. The ability to face the reality of their situation in a supportive environment could increase their overall QOL in addition to social functioning.</p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Noor-Mahomed, S.B., Schlebusch, L., & Bosch, B.A. (2003). Suicidal behavior in patients diagnosed with cancer of the cervix. <i>Crisis</i></p>	<p>Qualitative study to compile data on the anxiety, depression, stress, mental adjustment and social support scales for women with cancer of the cervix. Information was gathered with semi-structured interviews, the Hospital Anxiety and Depression Scale, the Stress Symptom Checklist, the Mental Adjustment to Cancer Scale, and the Social Support Questionnaire.</p>	<p>21 females from a voluntary group of adult, black, South African Zulu-speaking women.</p>	<ul style="list-style-type: none"> • In the sample, more patients scored higher for depression than anxiety. However, the majority of the sample scored in the “definite” range for both, and the remaining were in the “possible” range for both. • 17 participants expressed hopelessness and helplessness. • The participants expressed low satisfaction with their social support systems. • 12 of the 21 women perceived themselves as burdens to others in their life, and a belief that they would be better off dead. • 19 of the 21 reported significant stress with common physical, psychological and behavioral symptoms. Such symptoms include: muscle tension, difficulty relaxing; feelings of confusion, depression, anxiety, and loneliness; social withdrawal, sleep disturbances, fearfulness. 	<p>This study provided useful data for the psychological repercussions of a diagnosis of cervical cancer. Many of the participants experienced stress associated with their anxiety, depression, social withdrawal, fear of the disease and confusion. “Suppressed or unexpressed anger towards significant others was one of the significant themes expressed by many of the patients” (p. 171). <i>These unexpressed feelings and psychological symptoms need to be addressed earlier in the patient’s treatment to provide a psychological intervention. Psychotherapy groups can provide hope, a sense of empowerment, and increased communication aimed at stabilizing the patient.</i></p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Wenzel, L., DeAlba, I., Habbal, R., Kluhsman, B.C., Fairclough, D., Krebs, L.U., et al. (2005). Quality of life in long-term cervical cancer survivors. <i>Gynecologic Oncology</i></p>	<p>A cross-sectional descriptive design to describe the QOL and long-term psychosocial effects of cervical cancer survivors diagnosed during childbearing years. The interview was a questionnaire completed via telephone. The questionnaire utilized multiple tools to assess QOL, psychological distress, sexual functioning, reproductive concerns, social support, spiritual well-being, and coping efforts.</p>	<p>51 cervical cancer survivors and 50 age-matched controls. Participants were predominantly married, and non-Hispanic white.</p>	<ul style="list-style-type: none"> • Good QOL was reported, with physical and mental components comparable to norms. • Better physical status was associated with less cancer-specific distress and less maladaptive coping. • Better mental status was also associated with less cancer-specific distress, better social support, better spiritual well-being, better sexual functioning, and fewer reproductive concerns. • Participants who reported poor social support and reported greater distress had an increased likelihood of utilizing maladaptive coping skills (e.g., substance abuse, denial). 	<p>The authors found that reproductive concerns, for this sample, were related to the inability to bear children, talk openly about fertility, and mourning the loss of being able to have children. These concerns were related to a poorer QOL, less social support, and more cancer-specific distress. The most relevant finding was that 69% of the sample reported that they would have desired counseling at time of diagnosis. Additionally, 50% reported that they would attend counseling at the time of the study to address concerns associated with survivorship. <i>This study supports the need for a psychosocial intervention at time of diagnosis, as well as continuing past treatment.</i> Maladaptive coping skills and poor social support were significantly related to poor QOL and increased distress. <i>Providing a group environment to explore the psychosocial sequelae can significantly affect long-term QOL.</i></p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Wenzel, L.B., Donnelly, J.P., Fowler, J.M., Habbal, R., Taylor, T.H., Aziz, N., et al. (2002) Resilience, reflection, and residual stress in ovarian cancer survivorship: A gynecologic oncology group study. <i>Psycho-Oncology</i></p>	<p>Mixed methodology study exploring the long-term effects of ovarian cancer on survivorship sequelae and QOL. Researchers used questionnaires, 5-10 years post-diagnosis, with a sample of oncology patients who completed a previous clinical trial. Questionnaires gathered information on quality of life, sociodemographic data, cancer history, and medical history.</p>	<p>49 ovarian cancer survivors</p>	<ul style="list-style-type: none"> • 75% of the sample reported little to no problem with physical well-being at follow-up. However, 69% reported emotional well-being in the very poor to moderate range. Compared to age matched norms, 20% of ovarian cancer survivors are at or below the 25th percentile. This suggests that a proportion of the sample is emotionally at-risk survivors. • Sexual well-being measures identified several issues, such as decreased libido and arousal, problems with orgasm, and difficulty with intercourse during treatment. • 18% reported continued distress since completion of treatment, and distress associated with changes in appearance. • 21% stated that maintaining a positive attitude is extremely helpful. 	<p>An additional finding, linked to counseling, found that 12% joined a support group when initially diagnosed, and 56% would have joined if offered. If counseling were offered at the time of the study, 43% would participate. Although the QOL measures are comparable to other survivors, the long-lasting psychosocial effects, such as body image, distress, sexual functioning, and positive attitude maintenance need to be addressed by intervention. Based on the percentages of participants who suggested that psychosocial support would have been helpful then and now, healthcare professionals have to consider this as an addition to medical treatment.</p>
<i>Non-empirical research</i>				
<p>Fawzy, F.I. (1999) Psychosocial interventions for patients with cancer: What works and what doesn't. <i>European Journal of Cancer</i></p>	<p>A review of education, coping, emotional, support and psychotherapy interventions.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • Potential problems experienced during the initial treatment phase include "anxiety, fear, sadness, depression, loss of control, helplessness, hopelessness, anger and guilt" (p. 1562). • Additional symptoms may be treatment specific such as nausea and vomiting with chemotherapy, as well as body image issues (also related to surgical procedures). • A sense of isolation is a common side effect. 	<p>Psychosocial interventions are needed to provide the patient with mechanisms to handle the side effects of a medical diagnosis and accompanying treatment. Patients need to learn to manage side effects, adhere to their medical treatment, and improve their QOL.</p>

Table 1 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Wenzel, I., Vergote, I., & Cella, D. (2003). Quality of life in patients receiving treatment for gynecologic malignancies: Special considerations for patient care. <i>International Journal of Gynaecology and Obstetrics</i></p>	<p>A compilation of literature.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • Common symptoms associated with gynecologic cancers that can diminish QOL: pain, emotional distress, neuropathy, alopecia, nausea and vomiting, anemia, and fatigue. • Pain can have a negative impact on a patient’s mood, as well as social and occupational functioning. • Emotional distress includes alteration in life patterns, fear of death, loss of sexual feeling and femininity, anxiety, anger, and depression. • Due to the treatment’s negative effect on reproductive function, alopecia, disfiguring surgical treatment, and cosmetic issues, a patient can suffer from lowered self-esteem. Sexual dysfunction is another common result. • Fatigue is related to significant alterations in physical, emotional, psychological functioning, and overall daily life. • 57% of 161 long-term gynecologic cancer survivors (5-10 years post-diagnosis) stated that they desired counseling when they were diagnosed; 48% of this sample stated they were currently interested in a support program. 20% of the sample would have liked better communication skills with healthcare professionals. 	<p>“Supportive care is being increasingly recognized as a key component in routine cancer management” (p. 211). The authors note that additional nonpharmacologic therapies may be helpful in managing pain, such as imagery, distraction, music therapy, and relaxation exercises. Additionally, the authors compiled treatment strategies for the common symptoms, which include establishing a “supportive, empathic, nonjudgmental relationship with the patient” (p. 213), which gives the patient a safe space to express her feelings and problems. The authors’ conclusion is that by alleviating the impact of these negative effects, the patient’s QOL can be improved or enhanced. In turn, they will be better able to cope with the treatment process.</p>

Table 3

Mind-Body Therapies for Psychosocial treatment and Symptom Reduction

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<i>Empirical research</i>				
<p>Antoni, M.H. (2003). Stress management effects on psychological, endocrinological, and immune functioning in men with HIV infection: Empirical support for a psychoneuroimmunological model. <i>Stress</i></p>	<p>A psychoneuroimmunological model is presented for patients with HIV infection, in addition to a 10-week cognitive behavioral stress management (CBSM) group-based intervention.</p>	<p>34 men in the study group; 13 in the control group</p>	<ul style="list-style-type: none"> • The purpose of the CBSM intervention was to improve patient’s self-efficacy and perceived control; additionally, the aim was to teach adaptive coping strategies, and ways to maintain social support resources. • Similar psychological factors are evident in HIV as cancer: depression, anxiety, hopelessness, and fear of death. • The CBSM group showed decreases in anxiety, depression, and anger (measures were taken in association with 24-h urinary norepinephrine, plasma cortisol/DHEA-S) • The changes observed in the study group support the PNI model suggested in the article—stress management might modulate aspects of the immune system. 	<p>The findings of this article support that psychosocial interventions can improve psychological functioning, as well as immune functioning. The researchers provided relaxation techniques, methods to develop coping skills and social support networks. In turn, they found decreases in distress and mood states.</p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Ackerman, C.J. & Turkoski, B. (2000). Using guided imagery to reduce pain and anxiety. <i>Home Healthcare Nurse</i></p>	<p>Journal article describing the efficacy of guided imagery, and implementing it in a case study</p>	<p>1 subject</p>	<ul style="list-style-type: none"> • Guided imagery provides a client with a sense of empowerment, in addition to fewer visits to the healthcare profession, and lowered medical costs. • The patient's outcome is improved in relation to the positive impact of a sense of self-control. • The goal of guided imagery for clients is to distract them from painful stimuli and anxiety, thereby gaining a sense of relaxation. • The case study provided the patient relief from an acute phase of diabetes with an accelerated recovery. Additionally, the patient had decreased pain and stress, and more willingness to participate in rehabilitation exercises previously deemed as painful. 	<p>Guided imagery can have a strong positive impact on anxiety and pain, supported, possibly, by the Gate Control Theory. Through proper instruction, a patient has increased resources to alleviate the negative side effects associated with illness. <i>Multiple sources suggest that an increased sense of control over one's health has a positive relationship to overall QOL.</i></p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Galantino, M.L., Shepard, K., Krafft, L., LaPerriere, A., Ducette, J., Sorbello, A., et al. (2005) The effect of group aerobic exercise and T'ai Chi on functional outcomes and quality of life for persons living with acquired immunodeficiency syndrome. <i>The Journal of Alternative and Complementary Medicine</i></p>	<p>Mixed-methodology randomized clinical trial using the Medical Outcomes Short Form (MOS-HIV) and Spirituality Well-being Scale (SWB), in addition to functional measures and the Profile of Mood States. Qualitative measures were gathered from journals, focus groups and observations of nonparticipants. Data were analyzed using ANCOVA.</p>	<p>38 subjects (13 in T'ai Chi group; 13 in exercise group; 12 in control group)</p>	<ul style="list-style-type: none"> • The goal of the study was to examine if exercise (in the form of aerobic or T'ai Chi) improved the functional or psychological functioning of the participants. • The goals of the interventions included improving strength, flexibility, balance, and endurance (without equipment). • Proper diaphragmatic breathing exercises were encouraged. • Functional reach, related to balance, improved significantly in both exercise groups. • On the POMS subscales of confusion-bewilderment and tension-anxiety, a significant effect was measured. • Qualitative data supported the findings in the improvements of psychological and physical functioning. Themes that emerged included positive physical changes, enhanced psychologic coping, and improved social interactions. 	<p>This study supported the theory that group therapy and exercise has positive psychological effects for the participants. Participants stated that they felt more free and limber; that they slept better and had an increased appetite; they felt less depressed; and that the group inspired them to push harder and continue the exercises.</p>
<p>León-Pizarro, C., Gich, I, Barthe, E., Rovirosa, A., Farrús, B., Casas, F., et al. (2007) A randomized trial of the effect of training in relaxation and guided imagery techniques in improving psychological and quality-of-life indices for gynecologic and breast brachytherapy patients. <i>Psycho-Oncology</i></p>	<p>Randomized control study determining the effects of relaxation and guided imagery during the brachytherapy treatment. Data were gathered through questionnaires on anxiety and depression and QOL.</p>	<p>66 patients (32 in the study group; 34 in the control group)</p>	<ul style="list-style-type: none"> • The intervention included 45-50 minutes of treatment information as well as verbal processing (for both groups). The study group received training in relaxation and guided imagery. • The study group reported significantly lower levels of anxiety and depression. Additionally, a statistically significant decrease was found in the Body Discomfort Scale. 	<p>The intervention utilized by the researchers increased the psychological well-being of patients being treated with brachytherapy. Common emotional reactions include an increase in anxiety, depression and sadness. Teaching the patients tools to use during the procedure helped to alleviate the discomfort.</p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Spiegel, D., Bloom, J.R., Kraemer, H.C., & Gottheil, E. (1989) Effect of psychosocial treatment on survival of patients with metastatic breast cancer. <i>The Lancet</i></p>	<p>Quantitative study examining the effect of a 90-minute weekly support group on survival rates with a 10-year follow-up. Participant data were collected through questionnaires and analyzed using Cox's proportional hazards model.</p>	<p>86 women (50 in the treatment group; 36 in the control group)</p>	<ul style="list-style-type: none"> • The goal of the study was to analyze the improvement of QOL for women with metastatic breast cancer. However, the researchers found a positive effect of the quantity. • The intervention encouraged the participants to freely express their emotions about their cancer diagnosis and its effects, as well as the experience of the physical side effects. Additionally, it provided the participants an increased sense of empowerment in communicating with healthcare professionals. • The researchers emphasized: "living as fully as possible, improving communication with family members and doctors, facing and mastering fears about death and dying, and controlling pain and other symptoms" (p. 890). 	<p>The authors note that a patient's ability to cope with stress is directly related to social support. By gearing the intervention towards combating the participants' sense of isolation and increasing their coping skills, the findings pointed to an increase in both quantity and quality of life. The patients had a safe space to explore their emotions and be supported by others relating to their experience. Additionally, the patients were educated on hypnosis for pain control. The authors suggest that their involvement in the group could have produced better adherence to the medical treatment, maintenance of daily activities and exercise, thereby suggesting the link between immune system, emotional processes, and progression of cancer.</p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<i>Non-empirical research</i>				
<p>Achterberg, J, Dossey, L., Gordon, J.S., Hegedus, C., Herrmann, M.W., & Nelson, R. (1992). Mind-body interventions. <i>Alternative Medicine: Expanding Medical Horizons. A Report to the National Institutes of Health on Alternative Medical Systems and Practices in the United States.</i></p>	<p>A comprehensive review of complementary and alternative medicine techniques.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • The report presents thorough information on the techniques utilized in mind-body therapies. Mind-body therapies include psychotherapy, support groups, meditation, imagery, and dance therapy. • Mind-body therapies can help an individual gain greater control of their stress and mobilize the body for personal healing. • “Human” factors relevant for healing include empathy, caring, and compassion between the therapist and the patient. • Perceived meaning of one’s own health is a better predictor of one’s overall health than objective factors. • Anxiety and depression are common results from serious illness; however, most patients with medical illness are treated purely for the physical effects of the disease. • Psychotherapy can lead to fewer return visits and lower medical bills. 	<p>This report includes valuable information on specific techniques used in mind-body interventions. The authors provide research findings to support the effectiveness of treating the whole person rather than purely the specific area of illness.</p>
<p>Brown, R.P. & Gerbarg, P.L. (2005a) Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression: Part 1—Neurophysiologic model. <i>The Journal of Alternative and Complementary Medicine</i></p>	<p>Journal article outlining the use of Sudarshan Kriya yogic (SKY) breathing and its impact on a neurophysiological level.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • Yogic breathing is a way to balance the autonomic nervous system and potentially relieve anxiety, depression, PTSD, and chronic pain. • In a study conducted with slow cycles of a breathing technique, the study group showed greater reductions in tension, state anxiety, and skin conductance. • The SKY model potentially can strengthen, balance, and stabilize the autonomic and stress response system; in addition, an increased release of prolactin and oxytocin can enhance the sense of calmness and social bonding. 	<p>Breathing techniques have been found to have a positive impact on psychologic and stress-related disorders. With the neurophysiologic model, the authors have provided background to the efficacy in health related issues to include mind-body therapies. An individual’s increased control over their breath can help calm the stress response system.</p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
Brown, R.P. & Gerbarg, P.L. (2005b) Sudarshan Kriya yogic breathing in the treatment of stress, anxiety, and depression: Part II—Clinical applications and guidelines. <i>The Journal of Alternative and Complementary Medicine</i>	Journal article providing evidence that SKY is a beneficial treatment for stress and anxiety among other psychological and stress-related medical illnesses.	Not applicable	<ul style="list-style-type: none"> • Yoga techniques, including meditation, breathing exercises, and asanas (yoga postures) enhance well-being, mood, and stress tolerance. • Examples of studies show that SKY is effective in treating anxiety, insomnia, phobias, and post-traumatic stress disorder. 	Utilizing yogic techniques, such as meditation and breathing have been found to successfully ameliorate stress-related medical disorders and psychological disorders. The authors have found the SKY model to be beneficial to patients diagnosed with cancer in reducing stress and anxiety.
Fawzy, F.I. (1999) Psychosocial interventions for patients with cancer: What works and what doesn't. <i>European Journal of Cancer</i>	A review of education, coping, emotional, support and psychotherapy interventions.	Not applicable	<ul style="list-style-type: none"> • A compilation of research studies assessing the validity of different types of interventions. • The findings show significant changes in emotional distress, QOL, anxiety, and depression for these different types of interventions. • After treatment is completed, there may be ongoing anxiety and reactive depression that needs to be supported through psychosocial interventions. 	A theoretical framework is provided for interventions for oncology patients. Educational interventions can provide the patient with information about their illness and treatment. Emotional and psychotherapy groups create a space for patients to explore the negative impact the disease has had on their life. Group therapy can combat the sense of isolation. Fawzy outlines the different stages of the cancer diagnosis and treatment, and the appropriate goals of psychosocial interventions.

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Fobair, P. (1997a) Cancer support groups and group therapies: Part I. Historical and theoretical background and research on effectiveness. <i>Journal of Psychosocial Oncology</i></p>	<p>A review of group therapies and support groups for oncology patients.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • Existential group therapy is a highly used practice for group therapists in the US. Themes that arise in existential groups include death, freedom, isolation and meaning. • Supportive-expressive group therapy is an expansion of existential group philosophy and aims to build social support, open emotional expression, and reexamination of the individual's meaning of her own life. • Group leaders build a relationship based on empathy and caring. • Group cohesion enables a group participant to feel accepted by others, and allows them to share honestly with the group. Feeling a sense of universality can be healing. • Studies are highlighted that research the effectiveness of group process. In a variety of group settings, patients improved in QOL and active coping. 	<p>The author notes that through a review of studies of support groups, emotionally focused groups (i.e. supportive-expressive groups) may be the most effective in improving QOL for members. The article supports the group process as an effective way to combat isolation, and supporting emotional expression.</p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Fobair, P. (1997b) Cancer support groups and group therapies: Part II. Process, organizational, leadership, and patient issues. <i>Journal of Psychosocial Oncology</i></p>	<p>A review of literature addressing group process and positive aspects of groups for oncology patients.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • Goals of supportive group interventions include reducing anxiety and building patients' self-esteem. • "Cancer patients need a place where they can talk about their cancer treatment, find emotional release, and validate their concerns" (p. 126). • Effective techniques include relaxation techniques, and adaptive behavioral strategies for coping. • Common themes of group members include "shock, fear, isolation, anxiety, low self-esteem, and anger" (p.129). • Psychological distress can be alleviated by reducing the sense of isolation, improved ability to manage stress, and a reduction of pain through relaxation, self-hypnosis, and meditation techniques. 	<p>Fobair includes a review of studies that show a positive impact on overall QOL for oncology patients who participate in support groups. One study in particular, Bloom and Kessler (1994), provides support for early intervention (pre-treatment) in reducing potential reactive depression. Goals of the groups include decreasing the patient's sense of isolation, improving self-esteem, and achieving an overall greater sense of self through group cohesion, universality, and altruism.</p>
<p>Jacobs, G. (2001) Clinical applications of the relaxation response and mind-body interventions. <i>The Journal of Complementary and Alternative Medicine</i></p>	<p>Journal article reviewing peer-reviewed studies and literature.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • A compilation of research findings shows that relaxation response and mind-body interventions are clinically effective for stress-related illnesses. • The hypothesis is that the relaxation response triggers changes via the sympathetic nervous system, increases parasympathetic nervous system activity, and balances the two systems' functions. • The technique of cognitive restructuring guides patients to "recognize, challenge, and change stress-inducing thoughts, attitudes, and beliefs in order to minimize unhealthy negative emotions such as anxiety, anger, and depression...while promoting health-enhancing mental states, including sense of control and optimism" (p. S-94). 	<p>Jacobs's article highlights the use of mind-body interventions to decrease medical costs and visits to healthcare professionals. The use of techniques, such as relaxation response, can induce an emotional response to a physical ailment. Treatment for anxiety and depression can be amplified by including mind-body interventions.</p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Lazerson, J.S. & Zilbach, J.J. (1993) Gender issues in group psychotherapy. In H.I. Kaplan & B.J. Sadock (Eds), <i>Comprehensive Group Psychotherapy, 3rd Ed.</i></p>	<p>Chapter article discussing the contributions of gender issues in the process of group psychotherapy.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • The authors discuss the advantages of all women’s groups in terms of creating a safe space where women can explore their emotions. • The goals, as outlined by the authors, include: <ol style="list-style-type: none"> 1. Joining together to end women’s isolation from each other 2. Providing an atmosphere of warmth, acceptance, and safety 3. Supporting the exploration of women’s stereotypical roles 4. Placing gender-related behaviors in the cultural context 5. Analyzing power relationships and responses to hierarchy 6. Exploring individual stories to change stereotypical responses that may be self-defeating, thus empowering oneself and others 7. Developing self-empathy 8. Expressing a range of emotions, particularly anger, that may lead to social action 9. Developing new models of strength and competence and developing a shared story that unites women with each other to create individual and social changes (p. 691) 	<p>The authors created a list of goals that are applicable and necessary to the intervention developed in this research project. <i>A support group for women with gynecologic cancer should create a safe space for the participants to explore their emotional experience, in addition to the social and functional changes related to their medical diagnosis.</i></p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Kiecolt-Glaser, J.K., McGuire, L., Robles, T.F., & Glaser, R. (2002). Psychoneuroimmunology and psychosomatic medicine: Back to the future. <i>Psychosomatic Medicine</i></p>	<p>Journal review of literature clustering data into key themes, such as stressor duration and characteristics.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • A number of studies are cited that show that immune function is related to psychiatric syndromes. For instance, studies show alterations in immune functioning with anxiety and depression disorders. • Coping styles, such as repression, denial, and concealment, have measurable effects on immune functioning associated with monocyte counts, eosinophil counts, serum glucose measures, and T-cell counts. • In relation to Antoni's article previously cited, cognitive-behavioral stress management is cited to have a positive effect in HIV positive subjects. • "Individuals who have experienced more recent stressful life events may show greater immune change in response to minor stressors" (p. 19). • Interpersonal relationships are listed as a strong regulator for immune functioning. 	<p>Self-disclosure and seeking social support have positive effects on the immune functioning of individuals. Psychoneuroimmunology shows that coping styles, and, in turn, alleviation of psychiatric symptoms, have measurable physical alterations.</p>

Table 3 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Maier, S.F. & Watkins, L.R. (2003) Immune-to-central nervous system communication and its role in modulating pain and cognition: Implications for cancer and cancer treatment. <i>Brain, Behavior, and Immunity</i></p>	<p>Journal article reviewing the system of communication between the brain and immune system.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • When an organism’s immune system is triggered by an infection, the organism has a “sickness” response. This includes physiological and behavioral adjustments, in addition to the immune processes. • Behavioral adjustments are comprised of issues with anxiety and depression, a decrease in activity, sexual behavior, and appetite. The brain, then, is receiving communication from the immune system to trigger this response. • The authors conclude that processes altered by the sickness syndrome, via the bi-directional pathway of the brain and immune system may also be mediated by this system. 	<p>The authors suggest the side effects experienced from cancer treatment may surround this communication between the brain and the immune system. For example, fatigue is similar to the behavioral changes listed in the article. Therefore, potentially, the QOL of oncology patients may be viewed and mediated through the communication system between the brain and immune system.</p>
<p>Turner, J., Zapart, S., Pedersen, K., Rankin, N., Luxford, K., & Fletcher, J. (2005) Clinical practice guidelines for the psychosocial care of adults with cancer. <i>Psycho-Oncology</i></p>	<p>Journal article providing an overview for clinical practice guidelines</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • The guidelines include a list of challenges for patients diagnosed with cancer. These include emotional and social; psychological; physical; practical needs and financial; towards the end of life; and survival issues. • Social support is strongly emphasized as being a necessary component of treatment for oncology patients. • The authors mention that anxiety and depression may lead to a decreased capacity for coping with the illness. • Additionally, physical concerns may adversely affect the patient’s QOL, and trigger more severe conditions. 	<p>A comprehensive article introducing the clinical practice guidelines developed to expand the care for oncology patients. The authors clearly state that guidelines are needed because of the increasing awareness of emotional morbidity and complex issues faced by oncology patients. Healthcare professionals need to be educated in the psychosocial treatment necessary to fully support these patients.</p>

Table 6

Dance/Movement Therapy's Clinical Utility in Medical Care

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<i>Empirical research</i>				
Cohen, S.O. & Walco, G.A. (1999) Dance/movement therapy for children and adolescents with cancer. <i>Cancer Practice</i>	A comprehensive article illustrating how DMT can be applied to work with children and adolescents with cancer at different developmental stages.	Not applicable	<ul style="list-style-type: none"> • Coping with cancer is difficult when there is no guarantee of cure or remission. Tasks for coping include managing distress; a sense of worth; interpersonal relationships; and using one's own resources to handle the current demands. • Coping tasks from a DMT intervention "include intrapsychic and interpersonal processes that are inextricable with body movement expression and function" (p. 36) • Interventions developed specifically for the patient's developmental stage helped to decrease isolation; modulate affect; enhance social adjustment; develop coping skills; improve the patient's sense of self and body image. 	The approach of dance/movement therapy, and its holism, creates an alternative treatment to explore the multitude of psychosocial stressors related to a cancer diagnosis. It can be altered for the individual based on the age, developmental stage, environmental needs, and psychological needs.
Dibbell-Hope, S. (2000) The use of dance/movement therapy in psychological adaptation to breast cancer. <i>The Arts in Psychotherapy</i>	A mixed methodology study using the Profile of Mood States, Symptom checklist, Body-image scale, and a Social Desirability scale. Additionally, interviews and evaluations were used to gather qualitative data.	33 women with breast cancer	<ul style="list-style-type: none"> • An Authentic Movement intervention was used for six weeks to help the patients reconnect with their body through movement while being witnessed by another. • Participants reported feeling accepted and safe within the group. Combined with the caring and empathy of the leader, the women felt that their experience with social isolation, mood disturbances, and negative self-thoughts about their bodies were resolved. • The women reported feeling less anxious and depressed, and better able to assert themselves. 	Group therapy offers support and hope to patients, through a sense of universality and altruism. Based on the results, breast cancer patients significantly improved in mood, body image, and self-esteem. They found a greater sense of appreciation for their bodies, and an increase in feelings of social support. Vigor, fatigue, and somatization improved significantly. <i>Relevant to this study is that the program evaluations found that women thought support should be offered initially following diagnosis.</i>

Table 6 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Erwin-Grabner, T., Goodill, S.W., Hill, E.S., Von Neida, K. (1999) Effectiveness of dance/movement therapy on reducing test anxiety. <i>American Journal of Dance Therapy</i></p>	<p>A mixed design simple outcome study, with pre- and post-test scores. The researchers used the Test Anxiety Inventory (TAI) to collect the data. Analysis was done with parametric statistics.</p>	<p>21 participants (11 in the experimental group; 10 in the control group)</p>	<ul style="list-style-type: none"> • Four required movement sessions were held for 35 minutes at a time, and occurred one week before student midterm examinations. • The goals of the group included relaxation, self-control, self-awareness, trust, and group cohesion. • The DMT intervention resulted in significant decreases in the TAI total scores implying that DMT can reduce self-reported symptoms of test anxiety. 	<p>A brief DMT intervention helped to reduce the self-reported test anxiety symptoms in a small experimental group. The group consisted of relaxation techniques, and an increased mastery over one's body. <i>These same techniques are used in the following clinical intervention to decrease the anxiety associated with the gynecologic cancer treatment.</i></p>
<p>Goodill, S.W. (2005) Dance/movement therapy for adults with cystic fibrosis: Pilot data on mood and adherence. <i>Alternative Therapies</i></p>	<p>A repeated measures design was used with two groups. Pre-testing data were collected with the POMS questionnaire and human figure drawings. Post-testing data were collected with the POMS, adherence questionnaire and human figure drawings. Data were analyzed with a repeated measures ANOVA and a Chi-square test of independence.</p>	<p>14 in the treatment group and 10 in the control group</p>	<ul style="list-style-type: none"> • Goals of the group were emotional expression about cystic fibrosis and the hospital experience; mobilizing energy; and breath work. • Guided imagery and kinesthetically oriented relaxation were used in the groups. • At follow-up, the researcher found that the treatment group had a greater adherence to nutrition, but not exercise regimens. • No body image differences were found between groups or between pre- and post-test measures. • However, greater patient awareness about their emotional experience and physical experience, in session, showed clinical benefits. • No statistically significant information was gathered through the POMS except a within-subjects interaction (Time, Group, and Gender for levels of Confusion) 	<p>The author includes statements from the patients that showed their increased awareness of the physical sensations gained through the DMT intervention. In addition, one patient expressed the understanding that although there is no cure, a patient can still work on healing. <i>The goals of this group are similar to those for the gynecologic cancer patients. An increased understanding of one's own ability to relax and release tension is helpful for medical procedures.</i></p>

Table 6 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Ho, R.T.H. (2005) Effects of dance movement therapy on Chinese cancer patients: A pilot study in Hong Kong. <i>The Arts in Psychotherapy</i></p>	<p>A pre- and post-study design, using questionnaires for psychometric data, as well as a program evaluation. The Perceived Stress Scale and Rosenberg Self-Esteem Scale were used.</p>	<p>22 cancer patients between the ages of 39 and 69.</p>	<ul style="list-style-type: none"> • The written responses of the participants showed that they felt more relaxed, less stressed, a stronger mind-body connection, increased self-understanding, and increased spirituality. • The researcher found significantly lowered perceived stress scores and higher self-esteem scores. • Sessions included specific dances, spontaneous movement, relaxation exercises, and guided imagery. • The group provided cohesion among the participants decreasing a sense of isolation. 	<p>The author aimed to provide patients with a way to take pleasure from their bodies, and use the body for emotional expression. The lower perceived stress scores, higher self-esteem scores, and the positive quotes related to spirituality, relaxation, personal growth, and mind-body interaction show that the intervention was successful.</p>
<p>Sandel, S., Judge, J.O., Landry, N., Faria, L., Ouellette, R., & Majczak, M. (2005). Dance and movement program improves quality-of-life measures in breast cancer survivors. <i>Cancer Nursing</i></p>	<p>Quantitative study using outcomes measures gathered through Breast Cancer Quality of Life (FACT-B), shoulder range of motion (ROM) and Body Image Scale. The study was a randomized control trial with a crossover at 13 weeks.</p>	<p>35 women divided into two groups.</p>	<ul style="list-style-type: none"> • The researchers used a 12- week intervention using the Lebed Method, Focus on Healing Through Movement and Dance. The treatment group received the intervention from weeks 1 to 12, and then the control group received the intervention from weeks 13 to 25. • The FACT-B scores increased significantly for the first treatment group, and remained stable during the second half of the study. The wait list group also increased in FACT-B scores during the intervention period. • Body image improved after each group received the intervention. • The intervention consisted of breathing and stretching, imagery, and core exercises, dance “routines”, meditative movements, and focused breathing. • The dance movement goals were aimed at body image, sexuality, and a sense of control. The dance movements focused on positive expression, recovery and celebration. 	<p>The researchers found the improvements in the intervention group remained higher during the crossover phase and were encouraged that the improvements remained stable rather than decreasing shortly after the intervention. The program had positive feedback supporting its efficacy. The use of dance and movement can combat the negative psychosocial aspects related to a cancer diagnosis.</p>

Table 6 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
<p>Serlin, I.A., Classen, C., Frances, B., & Angell, K. (2000) Symposium: Support groups for women with breast cancer: Traditional and alternative expressive approaches. <i>The Arts in Psychotherapy</i></p>	<p>Mixed method study, outcome study.</p>	<p>Approximately 30</p>	<ul style="list-style-type: none"> • 12 weekly sessions, using kinesthetic imagining, focused on the here and now, and encouraged support and connection with others. The participants were encouraged to develop their own healing imagery. • The groups combined imagery, meditation, and movement. • Significant improvements were found on the subscales of fatigue, vigor and tension. • Significant decreases were reported for anxiety and depression. • Observed changes included women feeling more connected to their bodies; women, originally removed from the group, participating in the intervention; and confidence and hopefulness were identified in patients initially seen as hopeless and withdrawn. 	<p>The research reported from Serlin and colleagues had encouraging results for women becoming part of the group and gaining a stronger connection to their bodies. Anxiety and depression decreased, and fatigue, vigor and tension improved. Breast cancer has many similar psychosocial stressors as gynecologic cancer, so the findings are applicable to the intervention presented in this thesis.</p>
<p><i>Non-empirical research</i></p>				
<p>Aktas, G. & Ogce, F. (2005) Dance as a therapy for cancer prevention. <i>Asian Pacific Journal of Cancer Prevention</i></p>	<p>Commentary journal article discussing the development of dance therapy and how it works.</p>	<p>Not applicable</p>	<ul style="list-style-type: none"> • Movement using the whole body enhances the functioning of circulatory, muscular, respiratory, and skeletal systems. • An increase in one's well-being is due to the increase of endorphins in the brain. • Healing is promoted by dance/movement therapy because a group reduces a sense of isolation, creates bonds both socially and emotionally, reduces anxiety, releases muscular rigidity, creates a sense of hope, and encourages self-expression. 	<p>Dance/movement therapy is an effective tool for healing due to its connection on a physical, emotional, and cognitive level. Physical exercise has been proven to develop coordination and improve health. Emotionally, an individual is supported in exploring issues that may be too difficult for them to discuss verbally. DMT improves cognitive skills and motivation.</p>

Table 6 (continued)

Author, year, title, source	Design and methods	Subjects	Results	Information relevant to the current study
Cruz, R.F. & Sabers, D.L. (1998) Dance/movement therapy is more effective than previously reported. <i>The Arts in Psychotherapy</i>	Journal article addressing the information provided in a meta-analysis, conducted by Ritter & Low (1996), to show that DMT is more effective.	Not applicable	<ul style="list-style-type: none"> • Recalculations, based on new estimates, were done for anxiety, self-concept body awareness and psychiatric patients. • The authors provide effect sizes for other treatment modalities to illustrate how DMT competes. 	The authors found that DMT is more effective than Ritter and Low published in 1996. The new effect sizes calculated for the topics listed show that DMT is comparable to other treatment modalities for psychotherapy and medical treatments.
Goodill, S.W. & Morningstar, D. (1993) The role of dance/movement therapy with medically involved children. <i>International Journal of Arts</i>	Journal article presenting the rationale for use of DMT in providing psychosocial services for medically involved patients.	Not applicable	<ul style="list-style-type: none"> • The authors theorize that DMT for hospitalized, medically involved children can provide a patient with a way to integrate the changes experienced on a body level. • Themes that emerge within the context of DMT include: fear of death, expression of anger, loss of one's body boundaries, and control and mastery over the situation. 	The authors summarize that DMT can provide patients with an avenue to integrate the changes in body appearance or functioning, as well as an expression of emotions related to their diagnosis and treatment. The goals of DMT with any medically involved population should include both of these points, as a patient may feel betrayed by their own body, and lose the connection to a sense of self on a physical and emotional level.
Mendelsohn, J. (1999) Dance/movement therapy with hospitalized children. <i>American Journal of Dance Therapy</i>	Journal article presenting the use of DMT with hospitalized children, including clinical vignettes.	Not applicable	<ul style="list-style-type: none"> • Mendelsohn writes that the goal of the movement therapist in a hospital setting is to develop a safe environment based on trust. • Through this relationship non-verbal channels of communication are opened, and allow for a child to express feelings that they cannot verbally express. • Emotional support, provided by the therapist, is a long-term goal for this open expression. • Children use the symbolism of play and props to express their fears and anxieties. 	Mendelsohn's work establishes a set of goals to working with children in hospital settings. The main factor is to develop a safe, trusting relationship, where the patient is empowered to express oneself through non-verbal communication. Fears and anxieties can be released through creative play and the use of props. <i>The clinical model developed for gynecologic cancer patients needs to provide the patients with the same sense of control to openly express the emotional struggle experienced with a cancer diagnosis.</i>

	Week 1	Week 2	Week 3	Week 4	Weeks 5, 6, 7, and 8	Week 9	Week 10
Medical treatment	EBRT	EBRT	EBRT	EBRT	HDR brachytherapy	HDR brachytherapy	HDR brachytherapy
Themes for the group	Building relationships; creating a psychologically safe environment	Developing an individual identity, as well as learning to support and be supported by others	Body awareness, body boundaries and self-esteem	Preparing for the transition in treatment and advance anxiety	Exploring femininity, developing positive coping skills. Weeks 7 and 8 begin discussion on termination	Preparing for termination of group; building on previous techniques to continue developing personal identity and grounding	Review positive coping skills gained; have fun and be spontaneous
DMT Techniques	Use structure to create boundaries; introduce Weight Effort to establish a sense of self and grounding; work through planes, especially the horizontal plane associated with relating to others	Sharing leadership to develop a personal identity, as well as support and be supported by others; introduction of Time Effort in order to learn balance between indulging in time and fighting time	Tensing and releasing of muscles incorporating the Flow Effort; self-massage, and self-care techniques; Bartenieff Fundamentals (see Appendix C) to establish heel-coccyx and hip-pelvis connection	Utilizing empathic reflection (see Table 5) to increase self-esteem and self-awareness; incorporate Space Effort to develop capacity to have singular and multi-focus; to re-establish sense of self and grounding, revisit Weight Effort with stretch cloth	Allow for less structure with the body of the session as spontaneous movement for emotional expression; use props to relieve anxiety if emotions become intense or overwhelming; begin to combine all Effort qualities	Continue with spontaneous movement; Authentic Movement can be offered as a chance for the patients to begin to focus back on individual (preparing for termination); being witnessed and observing others provides skills in supporting and being supported.	As closing session, the participants should be encouraged to be spontaneous and have fun, focusing on the positive experiences of the group in celebration; reflect on new coping skills and personal gains.

Figure 1. A week-by-week view of the DMT intervention

Table 4

*Summary of Mind-Body Therapies***Authors who found that the psychoneuroimmunology model is an important consideration in the treatment of medical illness**

Antoni, 2003
 Brown & Gerbarg, 2005a
 Kiecolt-Glaser et al., 2002
 Maier & Watkins, 2003
 Jacobs, 2001

Authors who found that coping skills and support systems correspond to improvements in immune functioning

Antoni, 2003
 Kiecolt-Glaser et al., 2002
 Spiegel et al., 1989

Authors who found that social support is a highly effective treatment for psychosocial stressors

Antoni, 2003
 Fawzy, 1999
 Fobair, 1997a
 Fobair, 1997b
 Galantino et al., 2005
 Lazerson & Zilbach, 1993
 Spiegel et al., 1989

Authors who found that mind-body therapies decrease any of the following: anxiety, depression, or a sense of isolation; and increase any of the following: quality of life, sense of control, stress tolerance, or self-esteem

Antoni, 2003
 Ackerman & Turkoski, 2000
 Brown & Gerbarg, 2005a
 Brown & Gerbarg, 2005b
 Fawzy, 1999
 Fobair, 1997a
 Fobair, 1997b
 Jacobs, 2001
 Lazerson & Zilbach, 1993
 Spiegel et al., 1989

Table 4 (continued)

Authors who found that breath control and imagery could decrease negative physical reactions to medical treatments

Ackerman & Turkoski, 2000

Fobair, 1997b

Galantino et al., 2005

Jacobs, 2001

León-Pizzaro et al., 2007

Authors who found that breath control, imagery, and/or physical activity decrease negative psychological reactions to medical illness and treatment

Ackerman & Turkoski, 2000

Brown & Gerbarg, 2005a

Galantino et al., 2005

Jacobs, 2001

León-Pizzaro et al., 2007

Authors who found that a therapist-patient relationship based on caring and empathy is important for successful therapeutic treatment

Achterberg et al., 1992

Fobair, 1997a

Authors who found that mind-body therapies can decrease medical costs and visits to doctors

Achterberg et al., 1992

Ackerman & Turkoski, 2000

Jacobs, 2001

Table 5

Techniques Used in Dance/Movement Therapy and Their Purpose

Techniques	Purpose¹
Empathic reflection	A tool used between therapist and patient to attune to each other. The patient may feel that they are being “heard” and “seen”. This technique helps to build a sense of trust and communication.
Imagery	Imagery may elicit pleasurable sensations. Moving with imagery provides a symbolic representation for emotions. It helps to translate the internal experience to external experience.
Breath	The breath is used to ground the individual within one’s own body. Breath is a basic biological movement, which can be utilized to calm the autonomic nervous system. By accessing this movement, the patient is able to tune into their physical sensations, and elicit a sense of emotional calming.
Kinaesthetic Imagining	This technique uses props, artwork, music, and other external objects to provide symbolic representation for unspoken thoughts and feelings.
Spontaneous movement/improvisation	Free expressive movement empowers a patient to explore their movement repertoire and develop new outlets of creative expression. The freedom associated with the movement can provide detailed information into the emotional and physical functioning of the individual. One’s movement may come from feeling and expression of the unconscious.
Shared rhythmic action/synchrony	Shared rhythmic action results in group cohesion. Cohesion provides a sense of belonging, which supports the concept of universality. A sense of universal experience combats isolation and loneliness. In addition, group cohesion allows a group to progress and delve into deeper emotional expression.
Verbal processing	Verbally expressing oneself empowers a patient to put words to their feelings and explore their experience. It develops greater communication, social, and interactional skills. Processing the movement experiences activates one’s cognitive functioning.

¹The information presented in this table has been developed by the researcher based on various readings through the DMT graduate program, thesis research, and clinical work.