Journal of Music Therapy, XXXVIII (3), 2001, 212–238

The Effects of Group Music Therapy on Mood States and Cohesiveness in Adult Oncology Patients

Eric G. Waldon, MA, MT-BC

University of the Pacific

The purpose of the current investigation was to examine the efficacy of a music therapy protocol on mood states and levels of group cohesiveness in adult oncology patients. Eleven oncology patients in 2 groups (ages 30 to 84 years) took part in the study over a 10-week period of time (10 participants completed the study). During that period, participants took part in 8 music therapy sessions consisting of 2 types of interventions: (a) 4 "music making" sessions (where the mechanism for change included the process of making music) and (b) 4 "music responding" sessions (where the mechanism included the process of responding to music). The two types of music therapy sessions and their effectiveness on improving mood states and group cohesiveness were examined. The Profile of Mood States-Short Form *(POMS-SF) was used to assess changes in participants' mood states. A content analysis, attendance records, and a questionnaire were used to assess levels of group cohesiveness. Results showed significant improvement in mood state scores (from presession levels to postsessions levels) after involvement in all music therapy sessions. Similar significant findings were found within each of the "music making" and "music responding" conditions but no differences were found when comparisons were made between those conditions. No statistically significant effects were found with respect to group cohesiveness measures. Study implications and future research directions are discussed.*

This article is based on the author's Master's Thesis completed April 2000 at the University of the Pacific, Stockton, CA. Appreciation is extended to the author's thesis committee for their editorial recommendations and Tiffany Goodman-Bilbe for her immeasurable assistance while carrying out the study.

When a person undergoes treatment for cancer, the disruptions in everyday living patterns can have an effect on school and education, employment and vocation, peer and family relations, emotional well-being, physiological functioning, and self-concept. Individuals are taken out of their familiar environments and subjected to a series of events over which they have little or no control. These experiences can induce anxiety, aggravate the perception of physical discomfort, and may slow the healing process. Furthermore, the diagnosis can herald the beginning of a difficult period in the lives of patients' families (Singer, 1983). Financial strains, changes in family patterns, and issues of loss or death are hardships often faced by families who have loved ones living with cancer (Holland & Rowland, 1989).

In addition to many of these realistic hardships are, what Singer (1983) calls, "unrealistic stress and fears" (p. 15). These unrealistic stresses and fears are aroused when patients (and care providers) distort or ignore certain aspects of reality associated with the challenges that accompany a cancer diagnosis. Likely to be ignored are feelings of discomfort associated with alterations in a patient's physical appearance, difficulties associated with familial restructuring, or feelings and ideas relating to the possibility of death. Singer believes these unrealistic hardships have their origin in a number of the maladaptive defense mechanisms (e.g., denial, rationalization, etc.) used by patients in reaction to coping difficulties. While healthy uses of defense mechanisms do exist, Singer points out the importance of discerning between "healthy" and "pathological" coping strategies. Singer also states, "Because the affects associated with cancer are so painful, the utilization of defense strategies is particularly excessive and pervasive in this clinical population" (p. 15). In short, these realistic and unrealistic hardships serve to overwhelm the patient which can, in turn, lead to tenuous feelings of longevity, isolation, loneliness, dependence, and helplessness (Holland & Rowland, 1989; Singer, 1983).

Because many of these variables can have a potentially negative effect on treatment outcome (e.g., "Non-Compliance with Treatment" [The American Psychiatric Association, 1994]), it becomes necessary to target those negative phenomena and provide a corrective psychological experience. The literature relating to cancer and mood states, the importance of group cohesion as an impor-

tant curative factor in treatment, and the use of music therapy with oncology patients as a treatment adjunct are discussed below.

Cancer and Mood States

The effect of mind/body interaction on the progression of cancer has been the subject of much attention. Cousins (1979) subscribes to the idea that allowing oneself to experience "affirmative emotions" will, in turn, result in positive changes in body chemistry. In his personal account of recovery, Cousins described his method for provoking these "affirmative emotions" through changing his surroundings (by moving from the hospital to a hotel room) and laughter (by reading comic literature and viewing Groucho Marx films).

Sue, Sue, and Sue (1994) state, "The inability to express emotions or to form lasting interpersonal relationships is hypothesized to be associated with cancer" (p. 237). Many others, as found in the work of Simonton and his colleagues, share this idea. In their book, *Getting Well Again,* Simonton, Matthews-Simonton, and Creighton (1978) believe that illnesses are problems of the whole person, encompassing both mind and body. They state that psychological states play a considerable role in both the susceptibility and recovery from illnesses like cancer. Simonton et al. believe that patients who possess positive attitudes and beliefs in treatment retain the ability to combat disease. Throughout their work, in supporting their position, Simonton et al. cite evidence of the "placebo effect" using a number of dramatic case examples. With regard to intervention, Simonton et al. encourage the use of relaxation and imagery in an effort to decrease the perception of symptoms and aid in the healing process. One anecdote illustrated the case of a man given a 1% chance to live after the diagnosis of an inoperable cancer; after several months of relaxation training and imagery, he had made a complete recovery with no signs of disease.

Formal research on the effects of emotional states in cancer patients has been limited to a handful of studies. Laboratory studies using animals comprise one set of research inquires into the effects of emotional states on disease processes like cancer. Glenn and Becker (1969) examined the effects of the emotional states of mice on the immune system. In an attempt to identify the factors that influence the mice's immune systems, the investigators housed some mice together and placed others in isolation. Blood tests revealed

that mice that were caged alone exhibited an impaired immune response to foreign substances when compared to the immune responses of the mice housed in groups. The authors concluded that psychological distress resulting from isolation resulted in decreased immune function.

Formal research studies examining the effects of emotional states on cancer and other disease processes typically look at length of survival post diagnosis. Derogatis, Abeloff, and Melisaratos (1979) correlated a number of psychological characteristics associated with survival rates in 35 women with metastatic breast cancer. Each of the women received a battery of psychological tests, including: the SCL-90-R; The Affect Balance Scale; the Global Assessment Scale; and the PAIE. In general, participants identified as "long-term survivors" (those living past one year from diagnosis) demonstrated: (a) significantly higher distress levels (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, paranoid ideation, psychoticism) on the SCL-90-R; and (b) significantly higher levels of negative affect (anxiety, depression, guilt, and hostility) on the ABS. Furthermore, physicians assessed "long-term survivors" as having more negative attitudes about their disease than "short-term survivors." At first glance, this data would appear contrary to the "findings" of Cousins and Simonton et al. However, the authors stated "The patients who survived longer appeared more capable of externalizing their negative feelings and aspects of the underlying conflicts that give rise to them and did not appear to suffer any self image loss . . ." (p. 1507). When compared to the long-term survival group, the authors stated, "Patients who died more rapidly appeared distinctly less able to communicate dysphoric feelings—particularly those of anger and hostility . . . " (p. 1507). Derogatis et al. attributed the "hostile attitudes" of the "long-term survivors" to a "fighting spirit." This reframed interpretation of the effect of patients' mood states would, in turn, align findings on the impact of mood states with those supported by Cousins and Simonton.

Finally, in one of the most comprehensive cancer survival studies, the Seattle Longitudinal Assessment of Cancer Survival (as cited in Greenwald, 1992) examined data on the lives, resources, and mood states of 536 cancer patients. The use of standardized testing procedures (including the Profile of Mood States [POMS]) and the use of a large sample was done in an effort to provide the

objectivity and reliability absent in previous cancer survival studies. Overall, results did not support the premise that mood states had an effect on long-term survival in adult cancer patients. However, three indices of mood states (low confusion, high vigor, and low fatigue), as measured by the POMS, were associated with long-term survival. The nature of these indices would suggest a psycho-physiological origin for the effects of mood states on long-term survival.

While there is obvious disagreement among authors, clinicians, and researchers regarding the effects of mood states on cancer, work in fields like psychoneuroimmunology may provide a body of knowledge that will yield definitive answers. According to Cohen and Herbert (1996) the field of psychoneuroimmunology is concerned with "how emotions and personality affect health" (p. 113). Because tumor growth and disease progression in cancer is thought to be related to immune functioning, immunologically-related psychological factors (like mood) may indeed have some impact on cancer. Psychological variables, like a patient's mood state, could potentially impact the immune system through one of three pathways: by direct influence of the central nervous system; through hormonal pathways; or via behavioral changes. For example, anxiety is related to elevated levels of the stress hormone cortisol in the peripheral bloodstream. Cortisol is a glucosteroid shown to inhibit the healing process (Male, 1991). Prolonged exposure to the anxiety-eliciting stimulus may allow an opportunistic disease to develop. Because there appears to be a continued interest in mood states and their effects on cancer patients, continued investigation of mood states, as a predictor of a patient's health, is warranted.

Cancer and Group Cohesiveness

In his widely recognized text, *The Theory and Practice of Group Psychotherapy,* Yalom (1995) attributes the process of change in group therapy to 11 therapeutic factors. These factors include instillation of hope, universality, imparting information, altruism, the corrective recapitulation of the primary family group, development of socializing techniques, imitative behavior, interpersonal learning, group cohesiveness, catharsis, and existential factors. Singer (1983) says that group treatment is useful because many of these factors allow cancer patients to lower their defenses and deal more appropriately with their affective and situational stresses. Of Yalom's fac-

tors, group cohesiveness appears to have received much of the attention in the research literature with regard to cancer treatment. Group cohesiveness, as defined by Cartwright and Zander (as cited in Capuzzi and Gross, 1998), is "a function of the extent to which group members perceive the group as an effective means for satisfying their needs" (p. 226). A by-product of this increased "attraction to the group" is an amplified receptivity to the group's influence. With regard to cancer patients and group treatment, Singer believes that "Group cohesiveness is the most powerful curative factor because it allows the members to lower their customary prohibitions or inhibitions against being more spontaneous with their emotions" (p. 20).

In a pilot study investigating the mechanisms of change in a computer-based support group for breast cancer patients, Weinberg, Uken, Schmale, and Adamek (1995) attempted to correlate the influence of five of Yalom's therapeutic factors (group cohesion, altruism, instillation of hope, universality, and catharsis) with patient perceived "helpfulness of the group" (p. 57). Six female breast cancer patients participated in the 3-month cancer support group that involved group members placing messages on an electronic "bulletin board" that was set up exclusively for their use. Members were instructed to check the board frequently and either leave or respond to other members' postings. The group members discussed medical concerns, shared individual fears, and offered support. At the conclusion of the group, participants completed a questionnaire consisting of six scales (covering five of Yalom's factors and one scale evaluating group "helpfulness"). The authors determined that, among those factors examined, group cohesion was the most highly related to participants' perceptions of the overall helpfulness of the group.

The phenomenon of group cohesiveness is particularly relevant because a variety of support group programs have been offered to cancer patients as a means for addressing many of the negative affective states associated with cancer and its treatment: *I Can Cope, Cansurmount, Reach for Recovery, Make Today Count,* and various diagnosis-specific groups (groups for men with prostate cancer; groups for women with cervical cancer). Because group cohesiveness appears to fit in prominently as a curative factor with cancer support group work, attention should be directed toward maximizing its benefits.

Music Therapy and Cancer

In an age of holistic health care and growing reform, health professionals and the people they serve continue to seek out effective, noninvasive therapy adjuncts to treat health-related problems like cancer. Music therapy, serving as an ancillary treatment, can fill that role. Typically, music therapy interventions target the stress that decreases the quality of life and address specific goals like increasing self-expression, reducing fear, decreasing anxiety, alleviating physical discomfort, teaching relaxation, training leisure skills, assisting coping strategies, and providing a normalized environment (Davis, Gfeller, & Thaut, 1999). Some of these nonthreatening interventions consist of (but are not limited to) singing, instrument playing, music listening, music-assisted relaxation, song writing, musical improvisation, and movement to music.

In terms of cancer, some researchers have compared the therapeutic aims of music therapy with other allied health professions. Bunt and Marston-Wyld (1995) examined some of the ideological similarities and differences between music therapy and counseling (or psychotherapy) in cancer rehabilitation. Carrying out a brief program evaluation study, the authors had two purposes in mind: (a) to evaluate the contributions of music therapy within the program at a cancer care center and (b) to illuminate the similarities and differences between music therapy and counseling. Six different groups of cancer patients over a 4-month time period served as participants in this study. For the group therapy sessions, the music therapist served as facilitator and the counselor as a participant observer. Varying in intensity of emotion, music therapy sessions typically consisted of exploring central "group-defined" themes using musical instruments, improvisation, and group discussion. Data were collected on pre and posttest group "brainstorms" on the topic of "music and me." Content analyses of these "brainstorms" revealed many similarities and few differences between the fields of music therapy and counseling. With regard to similarities, the two disciplines appeared to share many characteristics associated with client-centered counseling (i.e., that the emphasis with regard to verbal expression is placed on facilitating the client's understanding rather than any therapist interpretation), relationship factors (empathy, congruence, & genuineness), and frequent uses of active listening. Of the few differences between music therapy and

counseling, music therapy appeared to provide participants with physiological as well as psychological stimulation while psychotherapy did not. Furthermore, the authors noted that music therapy interventions afforded patients the opportunity to escape both emotional and physical pain/preoccupations and have some "fun." Of music therapy and counseling, the authors stated that "Used together the unique strengths, similarities, and differences of both disciplines could be harnessed and integrated in complementary therapeutic strategies" (p. 46).

With regard to music therapy training and instruction, O'Callaghan and Colegrove (1998) studied the interaction between music therapy students and 46 hospitalized cancer patients. For this study, the authors performed a content analysis of students' introductions of music therapy (to patients) and the subsequent quality/level of interaction between the patient and student therapist. They concluded that for the initial student/patient contact: (a) student therapists who discussed patients' preferences were more likely to engage the patient; (b) patients who had overheard music therapy in other hospital rooms were more likely to engage in music therapy than those who had not; (c) patients who expressed either extreme physical discomfort or no physical discomfort were less likely to engage in music therapy; and (d) student therapists who described the benefits of music therapy to patients were not likely to engage those patients. While some of these results may appear surprising, they do point to the importance of the therapeutic relationship between the therapist and the cancer patient. O'Callaghan and Colegove state that students who engaged in verbalizations and behaviors that served to enhance patients' sense of autonomy (e.g., discussing a patient's musical preferences) were far more likely to engage those patients. In those situations when patients engaged upon hearing music therapy in other rooms, patients may have had a sense of "choice" prior to being asked to participate; again, an idea relating to autonomy and control.

The use of various music therapy techniques and procedures in oncology settings has been well represented in the research literature. In a study by Bailey (1983), the effectiveness of live music compared to that of prerecorded music was investigated in terms of several patient-reported dependent variables. Fifty cancer patients, ranging in age from 17 to 69 years, listened to 25 minutes of the same music under one of the two following conditions: (a) a

live music condition or (b) a prerecorded music condition. Under both the live and tape-recorded music conditions the participants were presented with the same menu of 16 songs, including "Moon River," "Blowin' in the Wind," "Kum ba yah, "Here Comes the Sun," "Bill Bailey," "You've Got a Friend," "It's a Small World," and "You Light Up My Life." For the live music condition, the investigator used a guitar and songbook to sing songs for participants. The prerecorded music condition consisted of audio recordings of the investigator playing the guitar while singing. Both the standard form of the Profile of Mood States (POMS) and a Summary Questionnaire were used to evaluate participants' responses. Results indicated that participants using live music experienced less tension-anxiety, experienced improved mood states, and displayed more vigor than participants in the prerecorded music condition (all as measured by the POMS). Furthermore, live-music participants recommended music sessions for others.

In another study by Bailey (1984), two case studies were used to describe how songs in music therapy are used to alleviate the physical pain and emotional stresses experienced by cancer patients and their families. Citing the ability of songs to provide cognitive stimulation, relationship building opportunities, tension release, integration, and pleasure, Bailey stated that music therapy encouraged the resolution of issues about people, places, and feelings.

Boldt (1996) investigated the effectiveness of music therapy interventions versus nonmusic interventions on several variables (endurance, relaxation, pain, nausea, comfort, etc.) relevant to patients undergoing bone marrow transplantation. Six participants took part in the study under two treatment conditions: long-term involvement (10 sessions) and short-term involvement (2–3 sessions). Therapy sessions (administered with and without music) consisted of deep breathing and imagery, progressive muscular relaxation, range of motion exercises, live music, and exercise on a fitness bike. The dependent measures/variables included an observational behavior scale, participant self-report of physical comfort, and an end-of-study questionnaire. Graphic analysis indicated that on the days music was administered as part of the treatment session, scores for comfort were improved (pre to post session). In general, long-term participants ($n = 2$) appeared to benefit more significantly than did short-term participants ($n = 4$); this finding

was especially true with regard to endurance where no short-term participants exhibited high levels.

Others have examined the uses of specific music therapy procedures (e.g., music listening, music-assisted relaxation, and music imagery) as a way of reducing chemotherapy-induced nausea and emesis in oncology patients. Frank (1985) designed a music and imagery protocol that addressed the relationship between psychological factors (e.g., anxiety and conditioning principles) and anticipatory nausea. Results indicated a significant decrease in state anxiety following the music and imagery treatment. Additionally, a negative correlation was discovered between length of music exposure and levels of anxiety. Furthermore, although not statistically significant, there was a decrease in participants' self-reported length of nausea. With regard to vomiting, results showed a significant decrease in self-reported degree and length of actual emesis. Standley (1992) examined the effects of music on: (a) the frequency and degree of nausea and vomiting; (b) the level of anxiety (as measured by a number of physiological and behavioral indicators); and (c) patient attitudes about cancer and treatment. Data collected on 15 participants showed that both music groups reported less nausea and a later onset of vomiting than the no-music groups. Additionally, all participants receiving music stated that they would use music listening during subsequent treatments.

Statement of Purpose

In summary, it is believed that music therapy interventions offer the cancer patient a number of corrective psychological experiences. It is also assumed that music, offered in a group setting, would only magnify these corrective experiences (Gaston, 1968). However, at the time of this writing, there is no research literature examining the effects of group music therapy experiences on adult oncology patients with regard to mood and cohesion. This study will also serve to further the research literature covering the uses of two types of music therapy interventions ("music making" interventions versus "music responding" interventions) with this population. Therefore, the purposes of this study were to: (a) identify significant changes in mood states and levels of group cohesiveness for participants involved in a group music therapy protocol for adult oncology patients; and (b) analyze those changes to determine

significant differences in outcomes between the two music therapy treatment conditions ("music making" and "music responding").

The rationale for exploring the uses of music therapy within a group setting for cancer patients is fourfold. First, the literature suggests the notion that group therapy during the course of cancer treatment is an effective means of reducing anxiety and fear while offering support and reassurance (Holland & Rowland, 1989; Vachon, 1986). Second, the use of treating groups of cancer patients as opposed to individual attention is obviously more cost-effective. Third, the lack of social activity and danger of psychosocial isolation is often problematic for the cancer patient. Finally, Gaston (1968), a leader in the music therapy profession, stated believing in the value of music as a means of social integration. It is expected that music therapy will serve to augment cancer support group treatment overall.

Method

Participants

Participants in this study were selected using the outreach and educational resources at a metropolitan cancer center. Information regarding the study was published in a cancer center newsletter and was made available at a number of cancer center-sponsored events. In order to be a participant in the study, the following inclusion criteria were established: (a) participants had to be at least 18 years old; (b) participants had to have been diagnosed with a malignant disorder not affecting the brain or auditory structures; and (c) participants had to have signed the consent form for participation in the study. After the list of prospective participants was compiled, each person was asked to choose between one of two evenings on which to participate in the music therapy sessions. Ten ($N = 10$) participants, 8 females and 2 males, ranging in age from 32 to 65 (with a mean age of 49.1 years), completed the study. According to a "Music Therapy Information Sheet" distributed at the first session, the predominant diagnoses among group members included breast cancer ($n = 5$) and non-Hodgkin's lymphoma ($n = 3$). Additionally, one participant reported having been treated for cancer of the tongue and another reported having had multiple myeloma. Reported onset of disease was diverse and some participants reported that they were currently undergoing treatment. Dates of diagnosis ranged from 23 years 7 months to less than 2

months. Due to the exploratory nature of this study, controls for age, gender, and type of cancer were not administered. Furthermore, 7 out of the 10 participants stated having attended cancer support groups prior to the current group. No participants stated having previous experience with music therapy.

Research Design

Independent and dependent variables. Both groups of participants received the two levels of the independent, treatment variable:

> Condition 1: "music making" music therapy interventions (wherein group members create music as part of the therapeutic group process);
>
> Condition 2: "music responding" music therapy interventions (wherein group members respond to, rather than create, music as part of the therapeutic process).

The dependent variables used in this study included measures of mood states and levels of group cohesiveness. The Profile of Mood States (Short Form) was utilized to assess mood states. The music therapy satisfaction questionnaire and a content analysis of group sessions was utilized to assess group cohesiveness. The music therapy satisfaction questionnaire was also used to assess the participants' perceptions of and contentment with the music therapy sessions.

Study design. This study employed an independent group repeated-measure/counterbalanced design. Both groups participated in eight, separate group music therapy sessions led by the investigator (a board-certified music therapist). The first group was involved in making music during the initial four sessions. During the final four treatment sessions, the first group participated in interventions wherein they responded to music. The second group received the same music therapy sessions except they received the music-responding music therapy sessions followed by the music-making music therapy sessions. Two sessions were held each week (one session for Group 1 and one session for Group 2). Each music therapy session lasted approximately one hour.

Treatment conditions. The two treatment conditions (independent variables) included the use of "music making" (Condition 1) and "music responding" (Condition 2) music therapy interventions. Under the Condition 1 ("music making" treatment condition sessions 1–4), participants engaged in each of the following activities:

(a) participants listened to a song performed by the investigator and then were asked to re-write some of the lyrics; (b) participants listened to a song performed by the investigator and then were asked to write new lyrics (a new verse) to the song; (c) participants listened to a short musical "Haiku" presented by the investigator and then were asked to write their own short "Haiku"; and (d) participants were asked to improvise a song using various pitched and nonpitched instruments.

Under Condition 2 (the "music-responding" treatment condition sessions 5–8), participants engaged in each of the following activities: (a) participants listened to a song performed by the investigator and then were asked to participate in a lyric-analysis of the song; (b) participants took part in a discussion on various uses of music and then were asked to participate in a brief relaxation experience; (c) participants took part in a discussion about the uses of music and imagery and then were asked to participate in a brief music and imagery experience; and (d) participants were asked to bring one musical recording to the group and share it with the other members.

Each music therapy intervention was preceded by a group discussion on a topic or theme relevant to cancer and the course of treatment and/or recovery. Themes used as topics for each of the sessions were suggested by books on coping with cancer and by support group facilitators known to the investigator. Music therapy interventions were viewed as a means of coalescing content elicited during the group discussions and maximizing curative factors (Yalom, 1995).

Materials

Profile of Mood States (Short Form). The Profile of Mood States (McNair, Lorr, & Droppleman, 1992) has been cited as being an appropriate means of assessing the mood states of psychiatric outpatients and as an instrument sensitive to responses to various therapeutic approaches (as in the current study). In fact, the standard version of the POMS was utilized in the Seattle Longitudinal Assessment of Cancer Survival (Greenwald, 1992), an investigation assessing the impact of cancer patients' emotional states on survival.

The rating scales of the POMS refer to six, separate mood factors which are viewed either ipsatively (individually) or collaboratively as a Total Mood Disturbance Score. The individual mood factors

include Anger-Hostility, Confusion-Bewilderment, Depression-Dejection, Fatigue-Inertia, Tension-Anxiety, and Vigor-Activity. The Vigor-Activity factor is the only "positive" mood factor on the POMS and it is weighted conversely to the other POMS factors when calculating the Total Mood Disturbance Score. Therefore, a higher Total Mood Disturbance Score is indicative of a more distressed mood state.

For the purposes of this study, the Short Form of the Profile of Mood States (POMS-SF) was used to assess mood states (McNair et al., 1992). It consists of 30 items (taken from the standard POMS), uses the same 5-point scale and 6 mood factors, and is printed with a larger font. According to the authors, it is the only authorized version of the short form and is considered valid and reliable.

Music therapy satisfaction questionnaire. A music therapy satisfaction questionnaire was distributed at two points during the study (Sessions 4 and 8). The purpose of this survey was twofold: (a) to assess participants' involvement in group music therapy using open-ended questions and (b) to assess levels of group cohesiveness (discussed below). The use of a survey to assess the effectiveness of music therapy within medical settings has been documented in the literature. Goloff (1981) conducted a survey that examined patients' attitudes and responses to music therapy experiences within a hospital setting. The results indicated that music therapy (as reported by the patients) (a) reduced perceived physical discomfort, (b) increased mood states in four of six categories, (c) was a helpful service provided by the hospital, and (d) improved the attitudes about hospitalization for 80% of the respondents. A survey similar to the one in Goloff was used in this study.

Group cohesiveness measures. In this study, group cohesiveness was assessed using two different procedures: (a) the music therapy satisfaction questionnaire and (b) a content analysis of group sessions. A portion of the music therapy satisfaction questionnaire included cohesiveness assessment items adapted by Yalom (Yalom, 1995; Yalom, Houts, Zimerberg, & Rand, 1967; Yalom & Rand, 1966) from the Gross Cohesiveness Scale (Gross, 1957). Corodobes (1997) utilized an identical instrument to assess the use of songwriting as a means of developing group cohesiveness in HIV-seropositive adults.

The second procedure, a content analysis of music therapy sessions, consisted of (a) developing an operational definition of ob-

servable behaviors consistent with group cohesion and (b) analyzing each music therapy session for occurrences of those behaviors. For the purposes of this study, the operational definition of a "cohesive group" included three categories of behaviors: participant attendance, music therapy objective completion, and occurrence of cohesive statements/gestures among group members.

With regard to the first category, attendance by group members represents the attractiveness of the group to its members. Therefore, attendance is a clear indication of the group's cohesiveness (Yalom, 1995). However, it is understood that participants may have been unable to attend for a variety of reasons that were unrelated to group cohesiveness: a preplanned vacation, doctor's appointment, unexpected emergency, or illness. Therefore, any absence that was not reported to the investigator prior to the session was counted as a "noncohesive absence" (NCA). As part of the content analysis on group cohesiveness, attendance was taken each session.

Yalom (1995) believed that when compared to noncohesive groups, cohesive groups will readily complete the tasks of the group, participate in group meetings, and engage in more self-disclosure. Therefore, the next behavioral category used in the content analysis consisted of whether or not group members completed the objectives set forth in the music therapy sessions. Each music therapy session consisted of one activity-oriented objective (e.g., a music relaxation exercise) and two self-disclosing objectives (e.g., sharing a use of music in daily life). As a prompt to complete each objective, the investigator gave a directive (e.g., "Now we are going to participate in a song-writing activity") or asked the group members to share a personal experience with the group (e.g., "Describe a hero in your life"). In an effort to ensure that group members had the freedom to respond or not respond, the investigator told the members that they were not required to participate in or answer any question unless they wanted to. Additionally, the investigator refrained from calling on members to respond. As part of the content analysis, a frequency count of participant-completed music therapy objectives was taken each session.

The final category comprising the group cohesiveness content analysis consisted of cohesive statements/gestures. As Yalom (1995) stated in a discussion on group cohesiveness, "it is essential that the members perceive their therapy group as safe and supportive" (p.

126). Therefore, as part of the content analysis on group cohesiveness a frequency count of the number of "cohesive gestures" or "cohesive statements" was made during each session. The following behaviors were included as occurrences of supportive statements/gestures:

1. Whenever a group member verbally supported the feeling or idea of another group member (e.g., "That must have been hard for you" or "That was a good idea, I liked that!");
2. Whenever a group member made a gesture that supported the feeling or idea of another group member (e.g., one member passes the box of tissue to another group member who began to cry).

Behaviors that constituted borderline responses with regard to the above response definition were not counted as an occurrence of a supportive statement/gesture. Common borderline response occurred when group members described similar experiences in relation to another member's experience. A research assistant was asked to provide reliability of observations for 6 of the 16 music therapy sessions.

This content analysis for all categories was completed using the Simple Computer Recording Interface for Behavioral Evaluation (SCRIBE) (Duke & Farra, 1996). SCRIBE is a computer program used for recording the timings, durations, and numbers of behavioral events. All music therapy sessions were videotaped and then subjected to analysis using SCRIBE. Wolfe, O'Connell, and Epps (1998) used a similar content analysis procedure using SCRIBE for music therapy relaxation groups.

Treatment/Measurement Procedures

On music therapy session days that did not include the administration of the POMS-SF or the music therapy satisfaction questionnaire (Sessions 1, 3, 5, and 7), the investigator engaged the participants in the appointed music therapy session. After the session ended, participants were dismissed. On music therapy session days that included the administration of the POMS-SF and/or the music therapy satisfaction questionnaire (Sessions 2, 4, 6, and 8), participants, upon arriving at the session, were asked to fill out the POMS-SF. After all participants completed the POMS-SF, the investigator began the music therapy session. Immediately after the mu-

sic therapy session, the POMS-SF (posttest) was re-distributed. The music therapy satisfaction questionnaire was also administered at this time for both groups (Sessions 4 and 8). After completion of all the appropriate dependent measures, participants were dismissed.

Results

One set of data were omitted from analysis because one participant in the second group withdrew from the study after attending one session. Additionally, given the small sample size of each group (Group 1, $n = 6$; Group 2, $n = 4$), analysis between the groups was not performed. Instead, all participant data were pooled per session (e.g., both groups' data for session 1, 2, 3, etc.) and analyzed accordingly ($N = 10$).

Mood States Data

A paired samples *t*-test was calculated to compare the mean pretest POMS-SF scores to the posttest POMS-SF scores for all sessions to determine whether or not participation in music therapy yielded a significant change in the total mood disturbance scores. The mean pretest score was 13.03 (SD = 13.86) and the mean posttest score was 4.00 (SD = 8.7039). A significant decrease from pretest to posttest was found, $t(33) = 4.07$, $p < .0001$.

Analysis on the Total Mood Disturbance Scores between the initial group meeting ($M = 9.88$, $SD = 14.9$) and the final group meeting ($M = 14.5$, $SD = 6.48$) yielded no significant effect, $t(7) = -0.553$, $p = .598$.

Further analysis was performed on each music condition to determine significance within conditions and between conditions on mood states. Two paired sample *t*-tests were calculated to compare the mean pretest POMS-SF scores to the posttest POMS-SF scores within each condition to determine a significant effect. Within the "music making" condition, comparisons between pretest (M = 12.67, SD = 13.6) and posttest ($M = 2.5$) scores yielded a statistically significant improvement in mood states, $t(15) = 3.08$, $p = .008$. A similar significant effect was found within the "music responding" condition between the pretest ($M = 13.33$, $SD = 14.47$) and posttest ($M = 5.33$, $SD = 9.58$) scores, $t(17) = 2.62$, $p = .018$. However, no significant differences were found after comparing mean gain scores between the "music making" ($M = 10.19$, $SD = 13.25$) and "music responding" ($M = 7.44$, $SD = 13.39$) conditions, $t(16) = 0.668$, $p = .514$.

TABLE 1

Mood Factor Pretest and Posttest Score Means (All Sessions), Standard Deviations, t *Values and Significance Levels*

		M	*N*	*SD*	*df*	*t*	*p*
Anger-Hostility						3.03	.005
	Pretest	2.24	34	3.53	33		
	Posttest	0.53	34	1.38	33		
Confusion-Bewilderment						2.40	.020
	Pretest	4.79	34	3.26	33		
	Posttest	3.44	34	1.78	33		
Depression-Dejection						1.97	.058
	Pretest	2.50	34	2.85	33		
	Posttest	1.62	34	1.99	33		
Fatigue-Inertia						3.94	.000
	Pretest	5.79	34	3.34	33		
	Posttest	3.68	34	2.95	33		
Tension-Anxiety						3.33	.002
	Pretest	3.71	34	3.97	33		
	Posttest	1.65	34	2.44	33		
Vigor-Activity						−0.68	.500
	Pretest	6.32	34	3.94	33		
	Posttest	6.82	34	4.64	33		

Analysis using a paired samples *t*-test on mood factor scores for all sessions, described more thoroughly in Table 1, revealed significant improvements for Anger-Hostility , Confusion-Bewilderment, Fatigue-Inertia, and Tension-Anxiety. One factor, Depression-Dejection, approached significance while the Vigor-Activity factor score was not significant.

When mood factor scores were compared (pre to post) using *t*-tests within both the "music making" and "music responding" conditions, there appeared to be significant improvement involving the identical mood factors of Depression-Dejection and Tension Anxiety (Table 2). Analyses on the other mood factor scores by condition yielded no significant results.

Additional analysis was performed for music therapy sessions on which mood state data were collected. In order, mean pretest scores for Sessions 2, 4, 6, and 8 were 11.36, 14, 14.33, and 12.33; mean posttest scores for the same sessions were 0.5, 4.5, 6.56, and 4.11. Pretest to posttest analysis for Session 2, $t(7) = 1.93$, $p = .095$, and Session 6, $t(8) = 1.431$, $p = .19$, yielded no significant results.

TABLE 2

Depression-Dejection and Tension-Anxiety-Pretest and Posttest Means (Within Conditions), Standard Deviations, t *Values and Significance Levels*

	M	*N*	*SD*	*df*	*t*	*p*
Depression-Dejection						
("music making")						
Pretest	2.56	16	3.29	15	2.43	.028
Posttest	0.94	16	1.81	15		
("music responding")						
Pretest	2.67	18	3.33	17	2.73	.014
Posttest	0.94	18	1.73	17		
Tension-Anxiety						
("music making")						
Pretest	3.19	16	3.58	15	2.83	.013
Posttest	1.50	16	2.22	15		
("music responding")						
Pretest	3.28	18	3.39	17	3.12	.006
Posttest	1.50	18	2.15	17		

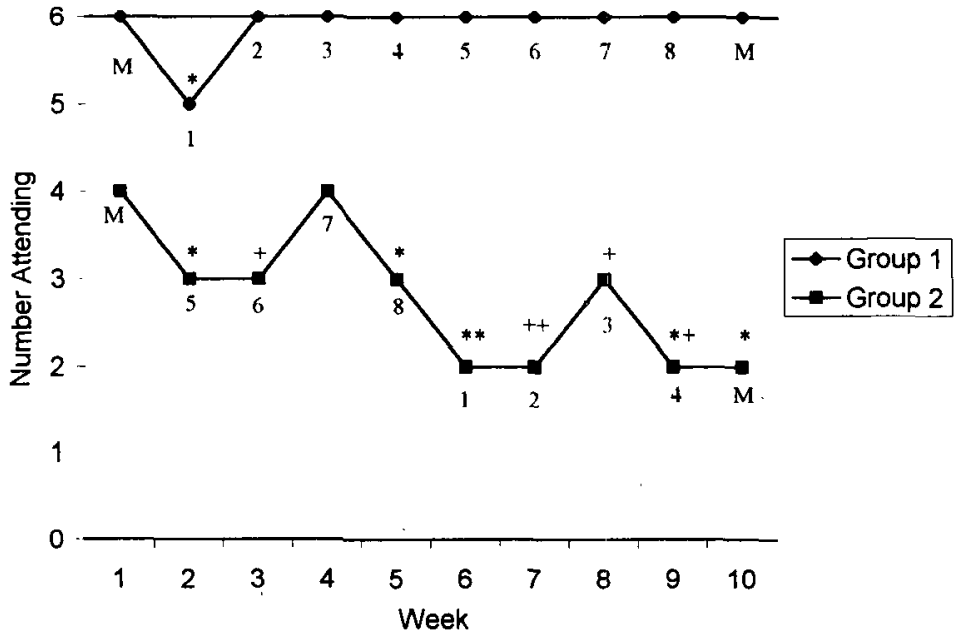
However, a significant improvement in mood state scores was found for Session 4, $t(7) = 2.44$, $p = .045$, and Session 8, $t(8) = 2.6$, $p = .032$.

Group Cohesiveness Data

A paired samples *t*-test was calculated to compare group cohesiveness scale scores from the music therapy satisfaction questionnaire (as derived from the Gross Cohesiveness Scale [GCS]) between the "music making" condition and the "music responding" condition. Results indicated no statistically significant difference between scores obtained from the "music making" condition ($M = 48.12$, $SD = 3.72$) and the "music responding" condition ($M = 48.87$, $SD = 3.8$), $t(7) = -0.87$, $p = .413$.

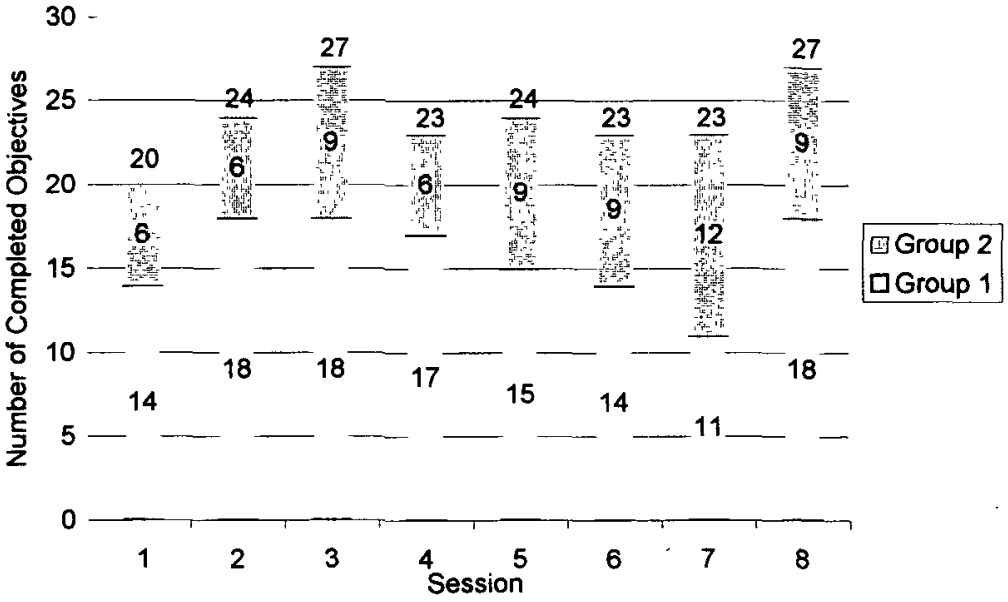
Group cohesive data obtained as part of the content analysis described above were subjected to analysis. Attendance and session objective completion underwent graphic analysis; results are found in Figures 1 and 2, respectively.

Interobserver agreement with regard to supportive statements/gestures yielded a reliability coefficient of 0.84. A series of chi-square goodness of fit analyses were performed on these cohesive observations within conditions and between conditions for



* Indicates the number of excused absences not counted as non-cohesive absences (NCA's).
+ Indicates the number of NCA's.
M Indicates a measurement-only meeting.
Numbers Indicate the "session number."

FIGURE 1.
Participant attendance by week.



Session totals for both groups appear above the bar for each music therapy session.

FIGURE 2.
Objective completion by session.

both groups. No significance was found. Additionally, analyses performed on each group over the course of treatment (to determine significant changes in cohesiveness over time) revealed no significant changes: Group 1, X^2 [7] = 2.23, $p > .05$; Group 2, X^2 [7] = 7.65, $p > .05$.

Discussion

Findings from this study supported the idea that group music therapy interventions for adult oncology patients significantly improved self-reported mood state (as measured by the POMS-SF). Furthermore, it was determined that both types of music therapy interventions (the "music making" and "music responding" conditions) significantly improved mood states for all participants. However, the data did not support the idea that one type of music condition significantly improves mood states over the other.

The fact that no significant effects were found after comparing Total Mood Disturbance Scores between the first and last meeting was not surprising to the investigator. Mood states are transient in nature and the POMS-SF is an instrument sensitive to current mood manifestations. Therefore, no accurate "prestudy" versus "poststudy" comparison could have been made using the POMS-SF. In future investigations, the use of a mood *trait* inventory (a measurement tool looking at relatively stable, nontransient affective phenomena) should be utilized.

Results, obtained pretest to posttest, for Sessions 4 and 8 showed a significant improvement in mood state scores. Perhaps the interventions taking place during those two music therapy sessions were the cause of the significant change. Both sessions dealt with group members having to share and allow other members to comment on some personal characteristic through a musical "object" (e.g., an instrument in Session 4 or a musical selection in 8). Conceivably, the positive feedback offered by others and the personal "sharing" of the individual group member enhanced a sense-of-self, thereby improving self-reported mood states.

Further analyses on the individual mood factor scores demonstrated significant improvements for four (Anger-Hostility, Confusion-Bewilderment, Fatigue-Inertia, & Tension-Anxiety) out of the six mood factors, further supporting the use of music therapy procedures for improving mood states. Interestingly, mood factor analyses within both the "music making" and "music responding"

conditions yielded significant results for the same two mood factors: Depression-Dejection and Tension-Anxiety. Perhaps the group atmosphere of the sessions and the reinforcing and recreational aspects of both music therapy conditions served to reduce the perceptions of loneliness, stress, and anxiety associated with those two mood factors.

The statistical data did not support the premise that music therapy interventions significantly affect levels of group cohesiveness (as measured by the GCS on the music therapy satisfaction questionnaire or by the content analysis of supportive statements/gestures). In future studies investigating changes in group cohesiveness, researchers may wish to utilize a pretest/posttest procedure (similar to the one used in this study on self-reported mood states) or multiple sampling techniques over time to examine the long-term effects of music therapy.

While the number of objectives completed by group participants (Figure 2) did not appear to yield any significant conclusions, attendance level by the two study groups (Figure 1) generated some interesting results. Group 1, who started off in the first music condition (Condition 1: "music making"), never experienced a NCA (noncohesive absence) during the length of the study. Group 2, however, experienced multiple NCAs and membership challenges throughout the life of the group. In addition to one group member withdrawing from the study completely, attendance appeared to continually decline to the last session. There appear to be two possibilities to explain this trend. First, the personality characteristics of the members in Group 1 may have contributed to more regular attendance. Perhaps the members were more cohesive from the first session or were more familiar with "group work" than members of Group 2. Another explanation involves the type of music therapy interventions at work when Group 1 began. Beginning treatment under the "music making" condition may have contributed to an early sense of "cohesiveness" that enhanced the attractiveness of the group. In fact, many of the interventions in the "music making" condition required members to work together to accomplish a single task. A similar pattern of attendance may have resulted had Group 2 started under the same music therapy condition. Perhaps an initial infusion of "cohesiveness" is essential for maintaining group membership and increasing the perceived "usefulness" of the group. Clinicians working in group settings may

wish to consider using "music making" interventions early in the course of treatment as a way of increasing group cohesiveness and regular attendance.

The participants provided a number of interesting responses to the open-ended questions included on the music therapy satisfaction questionnaire. In response to the question "What aspects of the group music therapy sessions did you enjoy the most?" three participants stated enjoying sharing personal experiences through music, two reported enjoying playing the instruments, while several others indicated enjoying specific musical activities (e.g., writing lyrics, relaxing to music, using imagery, listening to music, etc.). In response to another question, "What aspects of the group music therapy sessions did you enjoy least?" two group members indicated not enjoying the "Haiku" writing (because it was "limiting") and two others stated not liking the videotaping. In response to "If this were to become a regular group, what would you like to see added to the group music therapy sessions?" several respondents indicated that they would like each session elongated and three wanted to have background music playing during the "group discussions." With regard to the question "If this were to become a regular group, what would you like to see removed from the group music therapy sessions?" two participants stated wanting to get rid of the "paperwork" (the questionnaires and mood inventories) while one stated wanting to remove the videotaping.

The investigator experienced many challenges in designing and carrying out this study. As with any research investigation, it is impossible to control all of the extraneous variables that may confound the perceived outcome. One of the most difficult design challenges was finding participants who were willing to devote one evening of their week for 10 weeks. Many of the participants had made plans prior to committing to this study that resulted in inconsistent attendance. Additionally, a few of the participants were undergoing treatment (surgery, chemotherapy, examinations, etc.) and became ill during the course of the study, which also contributed to irregular group attendance. As any clinician working with groups realizes, these are just a few of the challenges one faces and must expect. In the face of irregular attendance, it is understood that typical cancer support groups do not require regular attendance and are often not sequential, as was the case in the current study. This information might be useful for those music

therapists wishing to carry out group music therapy with cancer patients.

Another interesting challenge faced by the investigator while completing this study involved the various personality characteristics of the groups' members. While, in most cases, this did not cause a problem, the case of the one participant's departure from the study brings up an interesting interpersonal situation, reflected in the literature. When asked during the initial group meeting, this particular participant stated wanting to "help others" as the main purpose for attending cancer support group meetings. After having attended one session, this participant expressed frustration over the inability to help one of the other group members. According to this participant, past encounters with the same group member resulted in similar feelings of frustration over the inability to "help" or "support" the other. After expressing these frustrations and the inability to reconcile "negative feelings" towards the other group member, the participant withdrew from the study. This participant's desire to "help" others falls under Yalom's (1995) therapeutic factor of *altruism.* Essentially, Yalom is referring to group members' need to help themselves by helping others: "In therapy groups . . . patients receive through giving, not only as part of the reciprocal giving-receiving sequence but also from the intrinsic act of giving" (p. 12). Yalom stated that this giving makes one feel useful or of importance to another. The aforementioned participant was not finding the group useful at fulfilling altruistic needs; withdrawing from the study was the solution/reaction. In this situation, unfulfilled altruistic needs may have prevented the participant from continuing in the group. This appears to parallel the work of Weinberg et al. (1995) who found that members of a computer-based cancer support group did not rate altruism as relating highly to the "usefulness of the group." In fact, of the five therapeutic factors examined by Singer (1983), altruism was the least correlated with "usefulness." For all clinicians working in cancer support group settings, a heightened awareness of unfulfilled altruistic needs may be warranted as they may be related to the cohesive phenomena of the "usefulness" or "attractiveness" of the group.

Cautious interpretation of this study's results and conclusions is recommended due to many of the threats to internal validity inherent in any research study: Is the phenomenon under investigation causing the observable changes *or* is something else causing

those changes? With regard to sample size, because a large pool of participants was unavailable for the current study, it becomes difficult to generalize these results outside the current investigation. In future studies, multiple site groups over longer periods of time may yield more group data. Also related to sample size are some of the statistics used to analyze this study's results. Referring to the paired *t*-tests used to analyze pretest and posttest scores between conditions and within sessions, it is typically recommended that the sample sizes of the data being analyzed be no less than $n = 30$. In both the cases listed above, that assumption was violated. However, analysis was still completed, due to the exploratory nature of the study.

When research participants are asked to make a self-report on a study's dependent measure(s) (e.g., on this study's mood states and satisfaction questionnaire) the possibility of a "self-report/data validity" threat arises. In a situation requiring self-report responses, the true effects of a variable may be hidden because participants (either knowingly or unknowingly) may be withholding honest thoughts in an effort to appear more "socially desirable." Perhaps members became aware of the purposes of this study (i.e., to see an improvement in mood states from pre to post) and responded accordingly on the POMS-SF. On the other hand, perhaps group members wanted to "do the polite thing" and evaluate the effectiveness of the music therapy sessions highly on the music therapy satisfaction questionnaire. Because the majority of this study's dependent variables were measured using self-report procedures, one should cautiously interpret the outcomes.

Despite the limitations of this and other applied research studies, clinical studies are valuable activities; they provide a means of increasing the body of research that all professional fields need. It is hoped that this study will serve as a catalyst, furthering research identifying the advantages of certain music therapy interventions in oncological care. While self-reported mood states yielded significant results in this study, future investigations may wish to examine physiological cohorts of affective states (e.g., muscular tension, peripheral blood cortisol levels, etc.). Although no statistically significant effects were found between measures of group cohesion and music therapy, potential research in this field with oncology patients should examine ways and means of enhancing group cohesiveness. This idea is supported by the research literature, which appears to place a premium on the importance of group cohesive-

ness in the recovery of oncology patients. Furthermore, given the support of music therapy and group counseling in cancer care, this study may point to new directions for the uses of group music therapy with adults living with cancer and help define the components of music therapy treatment that are the most beneficial.

References

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Bailey, L. M. (1983). The effects of live music versus tape-recorded music on hospitalized cancer patients. *Music Therapy, 3*(1), 17–28.

Bailey, L. M. (1984). The use of songs in music therapy with cancer patients and their families. *Music Therapy, 4*(1), 5–17.

Boldt, S. (1996). The effects of music therapy on motivation, psychological well-being, physical comfort, and exercise endurance of bone marrow transplant patients. *Journal of Music Therapy, 33,* 164–188.

Bunt, L., & Marston-Wyld, J. (1995). Where words fail music takes over: A collaborative study by a music therapist and a counselor in the context of cancer care. *Music Therapy Perspectives, 13*(1), 46–50.

Capuzzi, D., & Gross, D. R. (1998). *Introduction to group counseling* (2nd ed.). Denver, CO: Love Publishing Company.

Cohen, S., & Herbert, T. B. (1996). Health psychology: Psychological factors and physical disease from the perspective of human psychoneuroimmunology. In J. T. Spence, J. M. Darley, & D. J. Foss (Eds.), *Annual review of psychology: Vol. 47* (pp. 113–142). Palo Alto, CA: Annual Reviews Inc.

Corodobes, T. K. (1997). Group songwriting as a method for developing group cohesion for HIV-seropositive adult patients with depression. *Journal of Music Therapy, 34,* 46–67.

Cousins, N. H. (1979). *Anatomy of an illness as perceived by the patient: Reflections on healing and regeneration.* New York: Norton.

Davis, W. B., Gfeller, K. E., & Thaut, M. H. (1999). *An Introduction to music therapy: theory and practice* (2nd ed.). Boston: McGraw-Hill.

Derogatis, L. R., Abeloff, M. D., & Melisaratos, N. (1979). Psychological coping mechanisms and survival time in metastatic breast cancer. *Journal of the American Medical Association, 242*(14), 1504–1508.

Duke, R. A., & Farra, Y. (1996). *SCRIBE: Simple Computer Recording Interface for Behavioral Evaluation.* Austin, TX: Learning and Behavior Resources.

Frank, J. (1985). The use of music therapy and guided visual imagery on chemotherapy induced nausea and vomiting. *Oncology Nursing Forum, 12*(5), 47–52.

Gaston, E. T. (1968). *Music in therapy.* New York: Macmillan.

Glenn, W. G., & Becker, R. E. (1969). Individual versus group housing in mice: Immunological response to time-phased injections. *Physiological Zoology, 42*(6), 411–416.

Goloff, M. S. (1981). The responses of hospitalized medical patients to music therapy. *Music Therapy, 1*(1), 51–56.

Greenwald, H. P. (1992). *Who survives cancer?* Berkeley, CA: University of California Press, Ltd.

Gross, E. F. (1957). An empirical study of the concepts of cohesiveness and compatibility. Unpublished honors thesis, Harvard University, Cambridge, MA.

Holland, J. C., & Rowland, J. H. (Eds.). (1989). *Handbook of psychooncology.* New York: Oxford University Press.

Male, D. (1991). *Immunology: An illustrated outline* (2nd ed.). New York: Gower Medical Publishing.

McNair, D. M., Lorr, M., & Doppleman, L. F. (1992). *EDITS manual for the profile of mood states.* San Diego, CA: Educational and Industrial Testing Service.

O'Callaghan, C. C., & Colegrove, V. (1998). Effect of music therapy introduction when engaging hospitalized cancer patients. *Music Therapy Perspectives, 16*(2), 67–74.

Simonton, C. O., Matthews-Simonton, S., & Creighton, J. L. (1978). *Getting well again.* New York: Bantam.

Singer, B. A. (1983). Psychosocial trauma, defense strategies and treatment considerations in cancer patients and their families. *American Journal of Family Therapy, 11*(3), 15–21.

Standley, J. M. (1992). Clinical applications of music and chemotherapy: The effects of nausea and emesis. *Music Therapy Perspectives, 10*(1), 27–35.

Sue, D., Sue, D., Sue, S. (1994). Psychological factors affecting medical conditions. In *Understanding abnormal behavior* (4th ed., pp. 225–251). Boston: Houghton Mifflin Company.

Vachon, M. L. (1986). Models of group intervention. In S. B. Day (Ed.), *Cancer, stress, and death* (2nd ed., pp. 203–213). New York: Plenum Medical Book Company.

Weinberg, N., Uken, J. S., Schmale, J., & Adamek, S. (1995). Therapeutic factors: Their presence in a computer-mediated support group. *Social Work for Groups, 18*(4), 57–69.

Wolfe, D. A., O'Connell, A. S., & Epps, K. S. (1998). A content analysis of therapists' verbalizations during group music therapy: Implications for the training of music therapists. *Music Therapy Perspectives, 16*(1), 13–20.

Yalom, I. D. (1995). *The theory and practice of group psychotherapy* (3rd ed.). USA: Basic Books.

Yalom, I. D., Houts, P. S., Zimerberg, S. M., & Rand, K. H. (1967). Prediction of improvement in group therapy: An exploratory study. *Archives of General Psychiatry, 17,* 159–168.

Yalom, I. D., & Rand, K. (1966). Compatibility and cohesiveness in therapy groups. *Archives of General Psychiatry, 15,* 267–275.