Songwriting and Digital Video Production Interventions for Pediatric Patients Undergoing Bone Marrow Transplantation, Part II: An Analysis of Patient-Generated Songs and Patient Perceptions Regarding Intervention Efficacy

Sheri L. Robb, PhD, MT-BC, and Allison G. Ebberts, MME, MT-BC

Part I of this exploratory case study examined patient anxiety levels and depressive symptoms according to phase of bone marrow transplantation (BMT). The second part of this study examines more qualitative outcomes of the music therapy intervention. Purposes of this part of the study included: (1) to examine the lyrical content of patient-generated songs and (2) to compare patient perceptions regarding the effectiveness of a 6-week music condition with a no-music contact condition. Six pediatric BMT patients participated in the study. Three participants experienced the music condition and three participants experienced the no-music contact condition. Both conditions consisted of six, 1-hour sessions that occurred over a 3-week period. Content analysis of patient-generated songs revealed expression of issues related to the following themes: hope, positive coping, appreciation, mental status, control, time, bewilderment, treatment, and diagnosis. Examination of patient-generated songs provided insight into each patient's experience with transplantation and the coping strategies used during treatment. Outcomes from a poststudy questionnaire are summarized.

PROTECTED ISOLATION is a primary source of environmental stress experienced by pediatric patients undergoing bone marrow transplantation (BMT). Two adverse psychologic responses related to prolonged isolation are depression and anxiety (Kellerman, Rigler, & Siegel, 1979; Lesko, Kern, & Hawkins, 1984; McConville, Steichen-Asch, Harris, Neudorf, Sambrano, Lampkin, Bailey, Fredrick, Hoffman, & Woodman, 1990; Phipps, 1994; Wiley & House, 1988). Part I of this study examined depression and anxiety levels of patients according to phases of treatment, showing that songwriting and video production interventions lowered anxiety levels for this patient population (Robb & Ebberts, 2003). Part II of this study investigates the lyrical content of patient-generated songs. More specifically, an examination of patient-generated lyrics provides insight into the coping strategies used by these patients and identifies issues that these patients felt compelled to express during their admission for BMT.

Adolescent and preadolescent BMT patients are faced with an environment that must often impose restrictions. Isolated environments and related restrictions can result in feelings of diminished independence, interfere with identity

From the University of Missouri–Kansas City and Children's Mercy Hospitals & Clinics, Kansas City, Missouri.

Address reprint requests to Sheri L. Robb, PhD, MT-BC, Assistant Professor of Music Therapy, University of Missouri–Kansas City, 4949 Cherry St, Kansas City, MO 64110.

1043-4542/03/2001-0003$30.00/0

doi:10.1053/jpon.2003.4

formation, or pose difficulties related to tolerating a sterile environment (Lesko et al., 1984; McConville et al., 1990; Phipps, 1994). According to Skinner and Wellborn's (1994) motivational theory of coping, children who remain engaged with their environment generally cope with stress in an active, flexible, and positive manner. Many patients, however, will withdraw from the stressful environment and become passive recipients of care, which can lead to apathy and learned helplessness (Bossert, 1994; Kellerman, Zeltzer, Ellenberg, Dash, & Rigler, 1980; Melamed, 1991; Skinner, 1995; Worchel, Copeland, & Baker, 1987). The need for clinical interventions that: (1) promote active engagement and encourage independence, (2) focus on identity formation through self-discovery, and (3) diminish the sterile qualities of the BMT environment is evident.

Related literature support the application of music to meet these identified needs in pediatric BMT patients. First, music interventions have been effective in promoting active engagement in hospitalized children, encouraging independence through choice making, initiation of ideas, and problem solving (Aldridge, 1993; Barrickman, 1989; Froehlich, 1996; Magill, Coyle, Handzo, & Loscalzo, 1997; McDonnell, 1984; Robb, 2000). Second, songwriting interventions focus on patient-identified issues and events that occur inside and outside the hospital environment, working to maintain open communication and hope, which have been identified as aspects of good coping in children diagnosed with cancer (Artinian, 1976; Cordobes, 1997; Froehlich, 1984; McConville et al., 1990; O'Callaghan, 1996, 1997; Robb, 1996; Wiley & House, 1988). Finally, sterile aspects of the hospital environment can directly affect a patient's mood and anxiety (Lesko et al., 1984; McConville et al., 1990; Phipps, 1994). Music provides auditory, visual, and vibrotactile stimulation, making it an ideal stimulus for diminishing the sterile qualities of isolated environments (Brodsky, 1989; Nolan, 1992; Marley, 1984; Robb, 2000; Robb, Nichols, Rutan, Bishop, & Parker, 1995; Standley, 2000).

The goals and methods of therapeutic songwriting are well-documented in the professional literature (Edgerton, 1990; Ficken, 1976; Freed, 1987; Glassman, 1991; Goldstein, 1990; Goldstein-Roca & Crisafulli, 1994; Lindberg, 1995; Mayers, 1995; Micci, 1984; O'Callaghan, 1997; Robb, 1996; Sibler & Hes, 1995). Empirical investigation of therapeutic songwriting, however, is somewhat limited and to date includes studies with palliative care patients (O'Callaghan, 1996), human immunodeficiency virus–seropositive patients with depression (Cordobes, 1997), and hospitalized pediatric patients (Froehlich, 1984). These three studies report positive outcomes in the areas of interpersonal communication and self-expression. In addition to songwriting, music video production has been discussed as a therapeutic intervention for adolescents with traumatic injuries (Robb, 1996) and developmental disabilities (Knoll, 1998). To date, empirical investigation of music video production has been limited to its use as a behavioral contingency (Edison, 1989; Staum & Brotons, 1995). Recent advances in technology have enabled music therapists to more easily use video production as a therapeutic treatment modality. This study explores the combination of songwriting music video production strategies as a means for promoting self-expression and positive coping in children undergoing BMT.

Methods

Study Design

This exploratory study used a descriptive case study design to examine the content of patient-generated lyrics and patient perceptions regarding effectiveness of the treatment intervention. Participants were randomly assigned to the music or no-music/contact condition. Participants in the music group received two music therapy sessions each week, for 3 consecutive weeks. To control for possible effects of attention, an equal number of participants were randomly assigned to a no-music/contact group. Participants in the no-music/contact condition met with an interventionist and played a patient selected board, card, or video game. The no-music/contact condition occurred at the same frequency as the music condition. In part I of the study, scores from anxiety and depression inventories that were administered two times a week served as outcome measures for both groups. Part II of this study used techniques in content analysis to examine the lyrical content of patient-generated

TABLE 1.
Patient Demographics

Participant	Age (y)	Sex	Diagnosis	Donor Type	Previous BMT
Music condition					
P1	12	Female	Peripheral T-cell lymphoma	Autologous	No
P2	10	Female	Demoplastic small round cell tumor	Autologous	No
P3	17	Male	Acute Lymphocytic Leukemia	Allogeneic (unrelated) total body irradiation	No
No-music/contact condition					
P4	14	Male	Ewing's sarcoma	Autologous	Yes
P5	9	Female	Non-Hodgkins lymphoma	Autologous total body irradiation	No
P6	17	Female	Acute Myelogenous Leukemia	Allogeneic (related-matched sibling)	No

BMT, Bone marrow transplantation.

songs and descriptive statistics to examine patient responses to a poststudy questionnaire.

Participants

Over an 18-month period, eight pediatric BMT patients, ranging in age from 9 to 17 years, qualified for participation in this study. Of those eight patients, one declined to participate in the study and one served as a pilot for the music therapy protocol. The remaining six participants were randomly assigned to either the music or no-music/contact condition (music condition, $n = 3$; no-music/contact condition, $n = 3$). All participants were patients on the pediatric bone marrow transplant unit of a large Midwestern children's hospital. Criteria for patient participation included: (1) participants must be between the ages of 8 and 18 years (inclusive) and (2) participants must be pediatric oncology patients undergoing BMT.

Demographics for the participants are summarized in Table 1. The hospital in which this study took place conducts approximately 18 bone marrow transplants each year. The rate of admission and available subject pool for this study were small, with only eight patients qualifying for the study in an 18-month period. Surprisingly, age, gender, and donor type among participants was well-balanced. The most notable difference among subjects included previous experience with bone marrow transplantation (P4), higher total scores on the Children's Depression Inventory (CDI; Kovacs, 1992) for the no-music/contact group and the presence of two allogeneic transplants (P3: unrelated donor; P6: related donor–matched sibling). Additionally, participants three and five had total body irradiation during the pretransplant period.

Measurements

Content Analysis. Lyrics of patient-generated songs were transcribed and analyzed for recurring themes and patterns using content analysis procedures. Content analysis classifies textual material, reducing it to more relevant and manageable pieces of data (Weber, 1990). Two common uses of content analysis are to reveal the focus on an individual and to describe trends in the content of communication. The data process involves the reduction of words from written transcripts into fewer content categories (Weber, 1990). Content analysis does not use thematic coding categories generated before study implementation; rather, the coding categories emerge from text generated during the study. In this study, thematic coding categories were identified through a careful review of lyrics from patient-generated songs.

Four readers independently reviewed transcripts of patient-generated songs and identified thematic categories and trends within the lyrics. The four readers then conferred and agreed on a specific set of categories and operational definitions (Table 2). Using the identified thematic categories and operational definitions, the readers again reviewed patient songs and computed the frequency of identified themes. To ensure

TABLE 2.
Thematic Categories for Content Analysis

Thematic Category	Descriptions
Treatment	Statements that deal with medications, procedures, and diagnostic and monitoring equipment. (Note: Statements regarding side effects of treatments were coded under physical status.)
Diagnosis	Statements related to diagnosis or factual statements about one's cancer.
Bewilderment	Statements that convey feelings of confusion, of being stunned, or bewildered.
Time	Statements that convey feelings of being under pressure, strain, stress, or feelings of urgency.
Control (2 subcategories)	
Lost control	Statements that indicate a sense of helplessness; something that is beyond one's abilities.
Control	Statements of empowerment and independence; things are within one's abilities.
Hope	Statements about the future or positive thoughts regarding outcomes.
Positive Coping (4 subcategories)	
Family support	Positive statements about family; looking to family for strength/support.
Peer support	Positive statements about peers; looking to peers for strength/support.
Professional/Staff support	Positive statements about professionals; looking to professionals for strength/support.
Independent coping	(Note: See control; statements of independence/empowerment were coded in this category.)
Physical Status (2 subcategories)	
Positive	Positive statements regarding physical status (feeling well, energetic, wellness, pain-free).
Negative	Statements related to side effects from treatment or general physical condition (fever, vomiting, fatigue, headaches).
Mental Status (2 subcategories)	
Positive	Positive statements related to emotions (about self, situation, or others).
Negative	Negative statements related to emotions (about self, situation, or others).
Appreciation	Statements that express gratitude, thanks, or appreciation toward others.

consistency between content raters, interrater reliability scores were computed during the final categorization process using an *index of concordance* (sum of agreements/sum of agreements + disagreements). Interrater reliability ranged from .75 to 1.0 for each line of text coded.

Procedures

Upon referral to the study, an investigator met with prospective participants and their family in the hematology/oncology outpatient clinic prior to their admission for transplant. Information regarding the study was presented to the patient and family, followed by appropriate consent and assent procedures. If the patient was randomly assigned to the music condition, they viewed a completed video project to facilitate explanation of the project. Patients were then given a list of song titles, asked to consider which song they would like to use for their video, and encouraged to bring photographs or artwork from home that they might want to incorporate into their video when admitted for transplant.

Music Condition. Participants in the music condition received their first of six music sessions after their admission to the hospital for treatment. Sessions were initiated during the pretransplant phase of treatment. The six-week session protocol, however, spanned a three-week period and was designed to take place across all phases of treatment (See "Part I," pages 2-15, of this study for a full description of each treatment phase and resulting implications for the music protocol).

Upon arrival at the participant's room, the investigator administered the State-Trait Anxiety Inventory for Children (STAIC; Speilberger, 1983) and the CDI (Kovacs, 1992),

following standardized procedures. Following the administration of these measures, a board-certified music therapist engaged the participant in songwriting or digital video production, as specified in a standardized six-session treatment protocol.

Music interventions for the six-session protocol were designed based on the Contextual Support Model of Music Therapy (Robb, 2000). This theoretical model of music therapy asserts that music experiences can be structured to afford patients opportunities to experience mastery, autonomy, and relatedness. These experiences promote greater engagement with the environment and encourage patients to cope with hospitalization in a positive and active manner. Interventions were specifically designed to afford patients opportunities to make independent choices and decisions, express feelings related to self-identity or hospitalization, provide multisensory stimulation, and engage in a goal-oriented intervention that encourages mastery. Active portions of the intervention were clustered during the first three sessions of the protocol and included songwriting, discussion, and digitally recording patients performing their songs. More passive aspects of the intervention, including photo and artwork selection, video design, and discussion, were reserved for the last three sessions of the protocol. This was done in anticipation of increasing fatigue and physiologic side effects that would emerge as the patient progressed through each stage of transplantation. The investigator readministered the STAIC (Speilberger, 1983) at the conclusion of each music session.

No-Music Contact Condition. Upon arrival at the participant's room, the investigator administered the STAIC (Speilberger, 1983) and the CDI (Kovacs, 1992), following standardized procedures. Following the administration of these measures, the investigator engaged the participant in one of the following activities: (1) a board game, (2) a card game, or (3) a video game. Participants selected their preferred activity. The investigator readministered the STAIC (Speilberger, 1983) at the conclusion of each session.

Results

Content Analysis

Analysis of patient generated lyrics was conducted using methods of content analysis (Weber, 1990). As previously discussed, this method involved four independent readers identifying themes in patient-generated songs. Frequencies of identified themes were calculated as a percentage using the following formula: number of phrases (lines of text) coded in a thematic category/total number of phrases (lines of text). Results of the content analyses are summarized in Table 3. Themes that emerged from all three participants were positive and clustered in approximately three categories for each participant. Predominant categories for P1's lyrics included themes related to control or independent coping (19%), hope (14%), and family support (11%). P2's lyrics included themes related to positive physical status (58%), negative physical status (38%), positive mental status (33%), and professional/staff support (19%). Family support (75%) and appreciation (38%) were the predominant themes represented in P3's lyrics.

Poststudy Questionnaire

A poststudy questionnaire was administered to patients upon completion of their participation in the study. Patients were asked to rate how the condition they experienced affected them during their hospital stay. Participants were asked to rate the effectiveness of the condition in 10 different areas using a 5-point Likert-type scale (5 = very helpful, 3 = neutral, 1 = harmful). Participants also responded to two open-ended questions regarding their experiences with each condition. Responses to the Likert-scale items are summarized in Table 4; responses to the open-ended questions are summarized in Table 5.

Participants in the music group rated the condition as helping them to use their time during hospitalization for something that was fun (M = 5.0), followed by a mean score rating of 4.5 for the condition's positive influence on participants to make choices, feel good about themselves, improve mood, and express feelings. Participants in the contact condition indicated that improved mood, using time for something

TABLE 3.
Content Analysis of Patient-Generated Songs

Thematic Categories	Frequency of Themes*		
	Participant 1	Participant 2	Participant 3
1. Treatment	.08	.05	.00
2. Diagnosis	.08	.00	.00
3. Bewilderment	.08	.00	.00
4. Time	.03	.00	.00
5. Control			
5a. Lost control	.03	.00	.00
5b. Control*	19.00	.00	13.00
6. Hope	14.00	.00	.00
7. Positive Coping			
7a. Family support	11.00	.00	75.00
7b. Peer support	.08	.00	.00
7c. Professional/Staff support	.00	19.00	.00
7d. Independent coping†	19.00	.00	13.00
8. Physical status			
8a. Positive	.00	58.00	.00
8b. Negative	.08	38.00	.00
9. Mental status			
9a. Positive	.05	33.00	.00
9b. Negative	.00	.00	.00
10. Appreciation	.03	.00	38.00

*Frequency was calculated as a percentage using the following formula: number of phrases coded in a thematic category/total number of phrases.

†Indicates that categories 5b/7d were coded as representing the same concepts of independence and empowerment.

fun, and encouragement to do things normally done outside the hospital as the most beneficial aspects of the condition ($M = 4.7$). Responses to open-ended questions on the survey are summarized in Table 5 and provide further insight into each participants experience with the music and contact conditions.

Discussion

Content Analysis

All of the music participants wrote about themselves and their cancer. Examination of thematic content from patient-generated songs indicated the presence of some positive coping

TABLE 4.
Patient Surveys: Mean Scores for Likert-Scale Items*

Question	Condition	
	Music ($n = 2$)	Contact ($n = 3$)
1. Helped me relax	4.0	4.3
2. Decreased my fears about the hospital	4.0	4.0
3. Encouraged me to make choices	4.5	3.0
4. Helped me feel good about myself	4.5	4.0
5. Improved my mood	4.5	4.7
6. Helped me feel more energetic	3.5	4.3
7. Helped me use my time for something that was fun	5.0	4.7
8. Helped me express my thoughts and feelings	4.5	3.0
9. Encouraged me to do things for myself	4.0	3.6
10. Encouraged me to do things that I would normally do outside the hospital	3.5	4.7

*Items were rated on a five-point Likert scale (5 = very helpful; 3 = neutral; 1 = harmful). One patient from the music condition passed away before the questionnaire was administered.

TABLE 5.
Patient Comments to Open-ended Survey Questions

Music condition (n = 2); contact condition (n = 3)
Question: Were the project activities helpful for you during transplant? If yes, please explain your answer.
Music participants:
P2: "It took my mind off all of the stress. It helped to look forward to something successful."
P3: "I was able to concentrate on something else besides my BMT. It also gave me an opportunity to thank my friends, sister, and mom for all they do for me during this trying time."
Contact participants:
P4: "It gave me something to do."
P5: "I don't get bored. I have something to do. It was fun."
P6: "Well you don't feel sick for at least a hour that was helpful."
Question: In the future, would you choose to participate in this kind of activity? Please explain your answer. Please use the back of this form for additional comments.
Music participants:
P2: "I would because it was fun. And I got to do things the way that it made the hard things more bearable." "It is a good idea for others because it really does help."
P3: "I had a great time doing this project. I think it would be fun to do the project again with a different song and/or subject." "I really appreciate you letting me participate in this project. It was nice when I felt good to work on the project."
Contact participants:
P4: "Instead of playing games I like to do art."
P5: ". . . because it is fun. It let me relax."
P6: "It was fun enough to do again, plus the people were great."

One patient from the music condition passed away before the questionnaire was administered.

strategies for all participants. Positive coping strategies included independent coping (i.e., feelings of independence and self-control; confronting a situation) and family, peer, and professional support. Percentages of thematic content in the area of positive coping were 30% for P1, 19% for P2, and 88% for P3. Interestingly, the presence of negative coping strategies was limited to one line in P1's song and accounted for .03% of the thematic content. Additional themes prevalent in participant-generated songs were hope (P1, 14%), positive physical status (P2, 58%), negative physical status (P1, .08%; P2, 38%), positive mental status (P2, 33%), and appreciation (38%). Themes that emerged were overwhelmingly positive and represented individual, family, and social protective factors that Haase, Heiney, Ruccione, & Stutzer (1999) have identified as contributing to adolescent cancer patient's personal growth, adjustment to illness, and quality of life.

This two-part study is limited to the examination of anxiety as an outcome measure for the music condition; however, analysis of thematic content suggests that further studies should examine the role of this intervention in helping patients identify and develop personal strengths that enable them to manage stress related to illness in a positive manner. Haase et al. (1999) have developed an Adolescent Resilience Model (ARM) that identifies and defines the role of individual, family, and social protective factors in promoting resilience and life quality in adolescents with cancer. Content analysis of patient-generated lyrics in this study point to the presence of protective factors as outlined in the ARM. Given the presence of these important themes in patient-generated songs, and the positive response by patient's to the intervention, it would appear that subsequent investigations should focus on determining the efficacy of the music protocol in promoting protective factors in adolescents with cancer.

Poststudy Questionnaire

As mentioned in the review of literature, purposes of the songwriting/video production intervention were (1) to afford patients the opportunity to make choices and independent decisions, (2) to focus on each patient's personal interests and concerns, (3) to maintain open communication and foster hope, and (4) to diminish the sterile qualities of the environ-

ment by encouraging active participation in a goal-oriented, multisensory activity. Based on responses from participants, it would appear that the intervention was successful in encouraging patients to make choices (question 3; $M = 4.5$), promoting positive feelings about self (question 4; $M = 4.5$), improving mood (question 5; $M = 4.5$), and encouraging expression of thoughts and feelings (question 8; $M = 4.5$). The music condition also appears to have functioned to structure patient time in an enjoyable manner (question 7; $M = 5.0$). Responses from contact condition participants were also positive, with the highest mean rating of 4.7 occurring for three questions: improving mood (question 5), structuring time in an enjoyable manner (question 7), and encouraging patients to do things that they normally would do outside the hospital (question 10).

Based on these pilot data, it would appear that both conditions functioned positively to structure time and improve mood. The music condition, however, resulted in higher scores for making choices (music, $M = 4.5$; contact, $M = 3.0$) and expression of thoughts and feelings (music, $M = 4.5$; contact, $M = 3.0$). Responses to question 9 (encouraging me to do things for myself) and question 4 (feeling good about myself) were slightly higher for the music condition ($M = 4.5$; $M = 4.0$) than for the contact condition ($M = 4.0$; $M = 3.6$). Although the contact condition was enjoyable and resulted in a generalized positive response from participants (question 10; $M = 4.7$), it did not facilitate exploration and expression of thoughts and feelings (question 8; $M = 3.0$).

Contact participant's comments described the game playing condition as an enjoyable activity that helped structure their time (see Table 4)–the exception being P5 who noted that she would have preferred art over games. Interestingly, P5's anxiety scores indicated that the contact condition was not effective in consistently lowering her anxiety from the presession to postsession period (see Figure 7, part I of article). In contrast, P4 found the contact condition to be very beneficial (see Figure 6, part I of article). Comments from P4's mother and the investigator who implemented the protocol indicate that P4 eagerly anticipated the game condition and approached it competitively, keeping score across sessions. For this participant, the contact condition afforded choices (i.e., selection of game), was goal-oriented (i.e., keeping track of scores), and gave him an activity that he could look forward to each week. P5 also mentioned that the contact condition relaxed him. A majority of comments from contact participants, however, was limited to the role that game playing had in occupying time.

Comments from music participants were generally longer and attested not only to the benefits of structuring time, but outcomes related to communication and coping as well (see Table 4). For example, P2 noted that "It helped to look forward to something successful" and that ". . . I got to do things the way that it made the hard things more [bearable]." P3 noted that it gave him an opportunity to thank family and friends ". . . for all they do for me during this trying time." Comments such as these were not initiated by the contact group. It would appear that the music condition was functioning differently than the contact condition. One hypothesis would be that the music condition may have promoted the identification and use of personal coping strategies by patients; however, additional studies are needed to directly examine this hypothesis.

Clinical research indicates that many adolescent patients do not have an adequate repertoire of coping strategies to lessen the impact of a cancer diagnosis and its resulting treatment (Broers, Hengeveld, Kaptein, Le Cessie, van de Loo, & de Vries, 1998). Enhancing the effective use of coping strategies and decreasing symptom distress associated with BMT treatment have been identified as essential to improving psychosocial adjustment and increasing patient survival (Broers et al., 1998; Loberiza, Rizzo, Bredeson, Antin, Horowitz, Weeks, & Lee, 2002; Molassiotis, Van Den Akker, Milligan, & Goldman, 1997; Phipps, 1994; Tschuschke, Hertenstein, Arnold, Bunjes, & Denzinger, 2001). Despite compelling evidence regarding the needs of this patient population, clinical research documenting effective treatment interventions remains limited. Initial outcomes from this pilot study suggest that the proposed music-

based intervention may help patients undergoing BMT identify and develop personal strengths that will enable them to cope positively with stress related to diagnosis and treatment. Although outcomes from this study are limited by the small sample size, they provide a foundation for larger studies. Outcomes from subsequent studies will provide important data regarding the efficacy of the intervention to promote positive coping behaviors in adolescent patients undergoing bone marrow transplantation.

Acknowledgment

The authors would like to thank Daniel Greenfield, MD, Lynne Covitz, PhD, Masayo Watanabe, MD, Andrew Gilman, MD, and Alan Gamis, MD, for their support and guidance; and the staff, families, and children at the Children's Mercy Hospital, Kansas City, Missouri.

References

Aldridge, K. (1993). The use of music to relieve preoperational anxiety in children attending day surgery. *The Australian Journal of Music Therapy, 4*, 19-35.

Artinian, B. M. (1976). Fostering hope in the bone marrow transplant child. *Maternal-Child Nursing Journal,* 57-71.

Barrickman, J. (1989). A developmental music therapy approach for preschool hospitalized children. *Music Therapy Perspectives, 7*, 10-16.

Bossert, E. (1994). Factors influencing the coping of hospitalized school-age children. *Journal of Pediatric Nursing, 9,* 299-306.

Brodsky, W. (1989). Music therapy as an intervention for children with cancer in isolation rooms. *Music Therapy, 8*, 17-34.

Broers, S., Hengeveld, M. W., Kaptein, A. A., Le Cessie, S., van de Loo, F., & de Vries, T. (1998). Are pretransplant psychological variables related to survival after bone marrow transplantation? A prospective study of 123 consecutive patients. *Journal of Psychosomatic Research, 45,* 341-351.

Cordobes, 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.

Edison, C. E. (1989). The effect of behavioral music therapy on the generalization of interpersonal skills from sessions to the classroom. *Journal of Music Therapy, 26.* 206-221.

Edgerton, C. D. (1990). Creative group songwriting. *Music Therapy Perspectives, 8*, 15-19.

Ficken, T. (1976). The use of songwriting in a psychiatric setting. *Journal of Music Therapy, 4*, 163-172.

Freed, B. S. (1987). Songwriting with the chemically dependent. *Music Therapy Perspectives, 4*, 13-18.

Froehlich, M. A. (1996). *Music therapy with hospitalized children: A creative arts child life approach.* Cherry Hill, NJ: Jeffrey Books.

Froehlich, M. A. (1984). A comparison of the effect of music therapy and medical play therapy on the verbalization behavior of pediatric patients. *Journal of Music Therapy, 21*, 2-15.

Glassman, L. R. (1991). Music therapy and bibliotherapy in the rehabilitation of traumatic brain injury: A case study. *The Arts in Psychotherapy, 18*, 149-156.

Goldstein, S. L. (1990). A songwriting assessment for hopelessness in depressed adolescents: A review of literature and a pilot study. *The Arts in Psychotherapy, 17*, 117-124.

Goldstein-Roca, S., & Crisafulli, T. (1994). Integrative creative arts therapy: A brief treatment model. *The Arts in Psychotherapy, 21*, 219-222.

Haase, J., Heiney, S., Ruccione, K., & Stutzer, C. (1999). Research triangulation to derive meaning-based quality-of-life theory: Adolescent resilience model and instrument development. *International Journal of Cancer, 12*, 125-131.

Kellerman, J., Rigler, D., & Seigel, S. E. (1979). Psychological response of children to isolation in a protected environment. *Journal of Behavioral Medicine, 2*, 263-274.

Kellerman, J., Zeltzer, L., Ellenberg, L., Dash, J., & Rigler, D. (1980). Psychosocial effects of illness in adolescence. I. Anxiety, self-esteem, and perception of control. *Journal of Pediatrics, 97,* 126-131.

Knoll, C. (1998). Music therapy in action: Anecdotes and observations from the field. *Music Therapy Perspectives, 16*, 54-56.

Kovacs, M. (1992). *Children's Depression Inventory.* North Tonawanda, NY: Multi-Health Systems.

Lesko, L. M., Kern, J., & Hawkins, D. R. (1984). Psychological aspects of patients in germ-free isolation: A review of child, adult and patient management literature. *Medical and Pediatric Oncology, 12*, 43-49.

Loberiza, F. R., Rizzo, J. D., Bredeson, C. N., Antin, J. H., Horowitz, M. M., Weeks, J. C., & Lee, S. J. (2002). Association of depressive syndrome and early deaths among patients after stem-cell transplantation for malignant diseases. *Journal of Clinical Oncology, 20,* 2118-2126.

Lindberg, K. A. (1995). Songs of healing: Songwriting with an abused adolescent. *Music Therapy, 13*, 93-108.

Magill, L., Coyle, N., Handzo, G., & Loscalzo, M. (1997). Cancer and pain: A creative, multidisciplinary approach to working with patients and families. In J. Loewy (Ed.), *Music therapy and pediatric pain.* (pp. 107-114). Cherry Hill, NJ: Jeffrey Books.

Marley, L. S. (1984). The use of music with hospitalized infants and toddlers: A descriptive study. *Journal of Music Therapy, 21*, 126-132.

Mayers, K. S. (1995). Songwriting as a way to decrease anxiety and distress in traumatized children. *The Arts in Psychotherapy, 22*, 495-498.

McConville, B. J., Steichen-Asch, P., Harris, R., Neudorf, S., Sambrano, J., Lampkin, B., Bailey, D., Fredrick, B., Hoffman, C., & Woodman, D. (1990). Pediatric bone marrow transplants: Psychological aspects. *Canadian Journal of Psychiatry, 35*, 769-775.

McDonnell, L. (1984). Meeting the psychosocial needs of hospitalized children. *Children's Health Care, 12*, 29-33.

Melamed, B. G. (1991). Stress and coping in pediatric psychology. In J. H. Johnson & S. B. Johnson (Eds.), *Advances in Child Health Psychology* (pp. 3-15). Gainsville, FL: University of Florida Press.

Micci, N. O. (1984). The use of music therapy with pediatric patients undergoing cardiac catheterization. *The Arts in Psychotherapy, 11*, 261-266.

Molassiotis, A., Van Den Akker, O. B. A., Milligna, D. W., & Goldman, J. M. (1997). Symptom distress, coping style and biological variables as predictors of survival after bone marrow transplantation. *Journal of Psychosomatic Research, 42,* 275-285.

Nolan, P. (1992). Music therapy with bone marrow transplant patients: Reaching beyond the symptoms. In R. Spintge & R. Droh (Eds.), *MusicMedicine* (pp. 209-212). Cherry Hill, NJ: Jeffrey Books.

O'Callaghan, C. C. (1997). Therapeutic opportunities associated with the music when using song writing in palliative care. *Music Therapy Perspectives, 15*, 32-38.

O'Callaghan, C. C. (1996). Lyrical themes in songs written by palliative care patients. *Journal of Music Therapy, 33*, 74-92.

Phipps, S. (1994). Bone marrow transplantation. In D. J. Bearison & R. K. Mulhern (Eds.) *Pediatric Psychooncology.* New York: Oxford University Press.

Robb, S. L. (2000). The effect of therapeutic music interventions on the behavior of hospitalized children in isolation: Developing a contextual support model of music therapy. *Journal of Music Therapy, 38*, 118-146.

Robb, S. L. (1996). Techniques in song writing: Restoring emotional and physical well being in adolescents who have been traumatically injured. *Music Therapy Perspectives, 14*, 30-37.

Robb, S. L. & Ebberts, A. G. (2003). Songwriting and digital video production interventions for pediatric patients undergoing bone marrow transplantation, Part I: An analysis of depression and anxiety levels according to phase of treatment. *Journal of Pediatric Oncology Nursing, 20,* 2-15.

Robb, S. L., Nichols, R. J., Rutan, R. L., Bishop, B. L., & Parker, J. C. (1995). The effects of music assisted relaxation on preoperative anxiety. *Journal of Music Therapy, 32,* 2-21.

Sibler, F. & Hes, J. (1995). The use of songwriting with patients diagnosed with Alzheimer's disease. *Music Therapy Perspectives, 13*, 31-34.

Skinner, E. A. (1995). *Perceived control, motivation, & coping.* Thousands Oaks, CA: Sage Publications.

Skinner, E. A. & Wellborn, J. G. (1994). Coping during childhood and adolescence: A motivational perspective. In D. L. Featherman, R. M. Lerner, & M. Perlmutter (Eds.), *Life-span development and behavior, vol. 12* (pp. 91-133). Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Speilberger, C. D. (1983). *State-Trait Anxiety Inventory for Children.* Palo Alto, CA: Consulting Psychologists Press.

Standley, J. M. (2000). Music research in medical/dental treatment: An update to a prior meta-analysis. In C. E. Furman (Ed.), *Effectiveness of music therapy procedures: Documentation of research and clinical practice.* (pp. 1-60). Silver Spring, MD: The National Association for Music Therapy, Inc.

Staum, M. J., & Brotons, M. (1995). Issues in music for children in a homeless shelter: Social objectives and choice of reinforcers. *Journal of Music Therapy, 32*, 248-264.

Tschuschke, V., Hertenstein, B., Arnold, R., Bunjes, D., & Denzinger, R. (2001). Associations between coping and survival time of adult leukemia patients receiving allogenic bone marrow transplantation: Results of a prospective study. *Journal of Psychosomatic Research, 50*, 277-285.

Weber, R. P. (1990). *Basic Content Analysis* (ed 2.). Newbury Park, CA: Sage Publications.

Wiley, F. M., & House, K. U. (1988). Bone marrow transplant in children. *Seminars in Oncology Nursing, 4*, 31-40.

Worchel, F. F., Copeland, D. R., & Barker, D. G. (1987). Control-related coping strategies in pediatric oncology patients. *Journal of Pediatric Psychology, 12*, 25-38.