

THE FLORIDA STATE UNIVERSITY  
COLLEGE OF COMMUNICATION

COMPARISON OF THE EFFECTS OF MUSIC AND CONVERSATION ON  
HOSPICE PATIENTS' PREDISPOSITION TO COMMUNICATE  
AND COMMUNICATION BEHAVIORS

By

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## ABSTRACT

While researchers acknowledge broad therapeutic effects of music for patients at the end of life, limited information is available regarding the specific effects of music therapy compared with conversation-based treatment on communication behaviors and predisposition to communicate in hospice patients. Using a pretest-posttest repeated measures design, this study compared the quantity and quality of narrative and conversational advice-giving behaviors as well as the client's predisposition to communicate after both music therapy sessions and conversation-based life review sessions. Ten hospice patients participated in both music therapy and conversation-based life review treatment sessions. Prior to and immediately following both interventions, participants described a Norman Rockwell picture, participated in an advice-giving conversation task, and rated themselves on a Communication Predisposition Scale created by the researcher. Results revealed that participants rated their own willingness to talk significantly more highly after music therapy than after conversation-based life review. In addition, participants participated actively during one or both types of interventions, with more than half of the participants either performing musical activities or conversing at least 50% of the duration time. Statistical analysis of other dependent measures revealed no significant differences in conversation behaviors between treatment conditions; however, positive changes in verbal output in picture description were noted after both music therapy and conversation-based life review interventions, suggesting that both music therapy and conversation-based engagement may facilitate communication with terminally ill patients at the end of life.

## REVIEW OF LITERATURE

Communication is the foundation upon which relationships are based, and it plays a crucial role in daily functioning. Nussbaum, Pecchioni, Robinson, and Thompson (2000) wrote that engaging in a fulfilling life is highly dependent on each individual's relational system and how that system is maintained. It is important for this relational system, or communication, to be as intact as possible during all stages of life, even during the last stage of an individual's life. For the person who is diagnosed with a terminal illness, multiple issues arise that may only be resolved through communication. Clark (1993) emphasized the importance of communication, writing that the "inability to communicate is not a loss of life but a loss of access to life" (p. 549). Perhaps more than in any other population, people who are at the end of life have the need for communication with those around them (Llewelyn & Fielding, 1983). For patients who have neurological impairment, as many do at the end of life, restriction of communication can cause increased feelings of frustration, anger or loneliness (Cohen & Masse, 1993). Krout (2000) reviewed hospice and palliative music therapy research from 1978 through 1999 and concluded that expression of feelings is the most reported goal of hospice patients, with communication being the sixth most reported out of 27 total goals.

Several barriers to communication related to age and/or diagnosis may come into play for patients with a terminal illness. Nussbaum et al. (2000) provides examples of barriers to conversation for elderly clients that might decrease communication qualitatively and quantitatively, such as the decline of eyesight, hearing, cognitive abilities, and memory. These barriers also apply to the terminally ill population because a great number of hospice patients are elderly. Clark (1993) highlights communication disorders more specific to the end of life. Such disorders may be, and are not limited to, dysarthria (loss of ability to articulate), dysphonia (loss of voice), aphasia (language impairment), apraxia (inability to program muscle movements for articulation), or tumors that affect speech mechanisms or cognitive functioning. Persons who have dementia or who have suffered a traumatic brain injury also demonstrate disorders that impede communication. In addition, a significant number of hospice patients suffer from communication impairments simply as a direct result of the aging process (Nussbaum et

al., 2000). Other barriers, such as attitudes, emotional responses, pain, depression, and problems with family members and partners who are unsure about how to approach communication with dying people also present limitations for effective interactions.

### *Willingness to Communicate*

McCroskey (1992) devised a survey instrument to measure the construct of “willingness to communicate” and found it to be valid and reliable. The scale itself consists of 20 questions and asks participants to indicate the percentage of times (with 0 meaning “never” and 100 meaning “always”) they would choose to communicate in a variety of situations, such as talking “with a service station attendant” or talking “with a group of friends.” Subscores derived from the instrument offer information about willingness to communicate in four common communication contexts (i.e. group discussion, meetings, interpersonal conversation, and public speaking) and with three types of audiences (strange, acquaintance, friend). While potentially useful for typical communicators or for those with communication anxieties, this scale has not been employed with people who are at the end of life.

Multiple factors may contribute to the willingness of terminally ill people to participate in conversation. Kubler-Ross (1969) observed that patients are more willing to communicate and are less likely to be in denial if their physicians and caregivers are openly communicative. In addition, Kubler-Ross (1969) found that as long as patients know that there is someone willing to listen when they are ready to communicate, they will wait until the time is right for them; patients do not always have a natural or automatic inclination to communicate. Detmar, Aaronson, Wever, and Schornagel (2000) investigated the attitudes of cancer patients and their oncologists toward discussing health-related quality of life issues. They concluded that both patients and oncologists are willing to discuss a wide range of issues, but communication regarding psychosocial concerns may not actually occur due to differing expectations as to who should initiate such subjects. Kubler-Ross (1969) also revealed that patients’ desire to communicate depends on their stage in the dying process, such as denial and isolation, anger, bargaining, depression, and acceptance. In short, patients’ desire to engage actively or passively in communication, or in other interactions such as music, may vary due to multiple factors particular to individuals at end of life.

### *Topics of Communication at End of Life*

It is certainly possible that, as social circles grow smaller with the approach of death, meaningful communication with conversation partners becomes even more crucial. The topics and functions of end of life communication have been explored in several studies. In a recent survey study, King and Lasker (2005) found that both hospice workers and patients in hospice rated the topics of “reminiscence” and “symptom management” as those most frequently discussed at the end of life. In a study exploring the use of communication technology by people who were nonspeaking as a result of amyotrophic lateral sclerosis (Fried-Oken, Fox, Rau, Tullman, Baker, Hindal, Will and Lou, 2006) caregivers reported that important communication functions towards the end of life included meeting basic needs and regulating others behavior, maintaining social closeness, and discussing important issues. During this emotional time, relationships are more strained and grief is more complex, especially when the family or patient is in denial. In this circumstance, effective communication plays a vital role in relinquishing feelings of guilt and avoidance (Mauk, 2003). With the exception of uncontrolled pain, poor communication at the end of life causes more suffering than any other problem related to the dying process (Wist, 1993). Most researchers agree that communication, or lack thereof, can make the experience of dying either peaceful or one full of strife.

### *Nature of the Palliative Care Team*

According to Clark (1993), the primary goal for each patient with a terminal illness is to maintain quality of life. Instead of attempting to cure the terminally ill patient, hospice and palliative care clinicians attempt to increase quality of life through treating symptoms and providing comfort measures (Hilliard, 2003). There are several professional disciplines that help achieve this goal, including doctors, nurses, social workers, chaplains, grief support counselors, music therapists, and speech-language pathologists, among others. Speech-language pathologists play an important role in the promotion of more effective communication and are knowledgeable regarding the diseases and disorders that accompany both the aging process and dying. Speech-language specialists are qualified to provide clinical interventions to improve the quality and quantity of communication for people with a terminal illness. In keeping with the

primary goal of a hospice setting, speech-language pathologists may work to maintain life participation in important activities and thereby improve the quality of life (Clark, 1993). Some of the work of the speech-language pathologist may involve helping the patient and the family overcome barriers to communication.

Music therapists in palliative care play a unique role as members of the hospice team. In palliative care, music therapy offers non-intrusive opportunities for people to connect with and express their feelings (O'Callaghan, 1996). West (1994) explains that the therapist serves to better facilitate communication through validation of the dying experience, offering choices (such as song selection or instrument choice) to enhance internal locus of control, facilitating expression of past experiences, assisting in the identification of coping resources, and promoting relaxation through decreased muscle tension and anxiety.

#### *Music Therapy and the Nature of Verbal Productions*

Music therapy is defined as the use of music to facilitate therapeutic goals for addressing physical, psychological, cognitive, and social needs of individuals with disabilities (Davis, Gfeller, & Thaut, 1999). Music has long been a useful tool for the improvement of verbal communication because it overcomes physical, cultural, intellectual, and emotional barriers (Zoller, 1991). There is a fundamental relationship between music and communication that affords a channel for expression of thoughts and emotions that are not easily expressed through ordinary verbal discourse (Radocy & Boyle, 1979). Music serves as a link to accomplishing communication with an individual who seems unreachable through physical, emotional, or social barriers (Zoller, 1991). It is because of music's ability to communicate what words are often incapable of saying that music is a logical medium through which people with a terminal illness may express thoughts and feelings.

Much research demonstrates the efficacy of the use of music therapy to support speech-language pathology goals related to verbal production. A considerable number of studies describe the specific effects of music therapy on children with language disorders (Buday, 1995; Darrow & Starmer, 1986; Straum, 1987); however, given that the present study focuses on adults in hospice, this literature extends beyond the scope of this particular project. Other studies focus on the effects of incorporating music into

speech-language intervention with adults who have a variety of communication disorders (Boucher, Garcia, Fleurant, & Paradis, 2001; Carruth, 1997; Clair, 1996; Haneishi, 2001; Keith & Aronson, 1975; Redinbaugh, 1988). These studies suggest that using music to address the communication goals of patients with communication disorders can be effective means of accomplishing desired outcomes, such as improving the quality and quantity of verbal output.

Many patients in hospice present with neurogenic communication disorders, such as aphasia, dysarthria, apraxia, cognitive-communicative impairments, and dementia. These disorders may result from a variety of medical etiologies and may co-occur with other life-threatening illnesses. The research base describing patients with communication disorders at the end of life is quite limited; however, there are studies that describe the effects of music as part of rehabilitation programs for such individuals.

Examples of the integration of music therapy into rehabilitation with brain-injured populations occur in the aphasia literature. According to Chapey and Hallowell (2001), aphasia is “an acquired communication disorder caused by brain damage, characterized by an impairment of language modalities: speaking, listening, reading and writing” (p. 3). In the aphasia and motor speech disorder literature, Cohen and others have shown that music, particularly singing, is a viable tool in speech and language therapy (Cohen, 1994; Cohen & Ford, 1995; Cohen & Masse, 1993). One type of intervention that uses musical elements and has been shown to help some people with severely limited verbal output due to non-fluent aphasia, is called Melodic Intonation Therapy (Albert, Sparks, & Helm, 1973). MIT uses singing to improve speech production, with emphasis on the semantic or linguistic aspects of verbal utterances as the primary goal (Sparks, 2001). In MIT sessions, the clinician models progressively longer and more complex phrases using specific rhythm and melody line. The client is encouraged to produce the phrases with cueing and then independently, with the goal that the clients’ “intoned” verbal productions will be spoken naturally over time. Sparks, Helm, and Albert (1974) revealed that the right-hemisphere dominance for melodic aspects of speech appears to facilitate recovery of residual left-hemisphere speech skills for some individuals with aphasia. However, after significant research regarding who would be good and poor candidates for this method, it was found that MIT is most

beneficial for individuals with Broca's aphasia, who have poor repetition and moderately preserved auditory comprehension skills, and not for patients with other forms of aphasia (Helm, 1978; Naeser & Helm-Estabrooks, 1985). In addition, the researchers emphasized that MIT is best utilized in short, frequent treatment sessions over a limited time span (3-6 weeks).

Dementia, particularly that of the Alzheimer's type (DAT), is another cause of communication disorders for patients in the hospice setting. Research exploring the efficacy of music therapy with Alzheimer's disease and related dementias (ARD) has increased dramatically in the past several decades. For example, Brotons, Koger, and Pickett-Cooper (1997) compiled a review of literature of empirical studies that used music as a therapeutic intervention for patients with dementia. Their findings show that "people with ARD respond to music, suggesting that music may be one medium through which elderly with ARD may communicate and access memories that are difficult to recall through traditional verbal means (p. 238)." The literature illustrates how music influences various behaviors of people with ARD. One study by Clair and Ebberts (1997) speaks to the amount of participation and interaction between individuals with late stage dementia and their caregivers. The researchers used a questionnaire to measure how caregivers of people with dementia feel about possible burden, depression, changes in affect, their own health, and general feelings about their family member with dementia. This study provided information supporting the need for attention not only for the patient, but for the caregivers as well. Music therapy provided a medium through which interaction could occur through singing, dancing, and rhythm activities, with the most participation occurring during rhythm playing.

In a more conversation-related study, Brotons and Koger (2000) compared the effects of music therapy and conversational sessions on language functioning in dementia patients by administering the picture description subtest of the *Western Aphasia Battery* (Kertesz, 1982). Of the twenty-six subjects who participated in this study, only twenty participants were able to complete the picture description task, therefore data were only analyzed from those results. The data were collected for two weeks for each of the two variables (two weeks for music therapy and two weeks for conversational sessions). The results, as assessed by the standard descriptors of

Information Content and Fluency on the *Western Aphasia Battery*, demonstrated that speech content and fluency were better following music therapy than after conversational sessions with a therapist. These findings are significant because they show that music therapy positively influences certain language skills (speech content and fluency) for people with DAT, therefore it is possible that music therapy might increase the content and quantity of communication for people with a terminal illness.

A considerable amount of research exists regarding the role of music in speech therapy for individuals with motor speech disorders, such as dysarthria and voice impairments. Cohen (1994) reports that the elements necessary for correct singing are also required in correct speech production. In a study by Cohen and Masse (1993), the effects of rhythmic and singing instruction on verbal intelligibility and rate of speech were examined. Results show that speech production was enhanced through instruction in basic singing techniques, including breathing patterns, coordinated phonation, and accurate diction. Another study looked at the effects of a music therapy voice protocol (MTVP) that was developed by the researcher (Haneishi, 2001) on the speech intelligibility, vocal intensity, maximum phonation, vocal fundamental frequency, vocal fundamental frequency variability, and mood of individuals with Parkinson's disease. There were four female participants in this study, ranging in age from 67 – 77 years. In this study, Haneishi (2001) found that the MTVP significantly increased vocal intensity and speech intelligibility as rated by caregivers. Though self-rated mood scores and selected acoustic variables did not reveal significant differences, they showed improvements. The mood of the PD patients in this study was shown to improve as a result of the MTVP, which might be a significant finding for information regarding the communication of hospice patients. Although the participants in this study were not in the end stages of PD, these results can provide more insight into how music can assist in the communication needs of PD patients in hospice care.

#### *Role of Music at the End of Life*

A common music therapy technique used to promote expression of feelings is song writing. O'Callaghan (1996) conducted a study to examine the use of song writing in palliative care and analyzed the content of the lyrical themes. In this study, 39 palliative care inpatients (primarily cancer and multiple sclerosis) actively participated in

a song writing process to determine the lyrical themes and categories of songs written at the end of life. The most common themes that appeared in the songs were “messages, self-reflections, compliments, memories, reflections upon significant others (including pets), self-expression of adversity, imagery, and prayers” (p. 84). These research findings may assist professionals, friends, and family members to better understand the communication needs of hospice patients who are nonverbal or who might become nonverbal.

Kubler-Ross (1974) described music as a unique and neglected form of communication that can be effectively used with people who are dying. Many studies have demonstrated the benefits of music therapy in the hospice and palliative care setting, but much of the literature takes the form of qualitative descriptions. The few quantitative studies (Hilliard, 2003) focus mostly on the effects of music therapy on physical comfort or anxiety levels (Curtis, 1986; Kerr, 2004; Krout, 2001). Knowing the effects of music therapy on psychological and spiritual well-being is important to support the expression of communication at the end of life. Wlodarczyk (2003) analyzed the effect of music therapy on spirituality of hospice patients. This study demonstrated that more subject-initiated conversations of spiritual issues were discussed following a music therapy visit than on days without music therapy. Thirty-five percent of the ten patients who participated in this study initiated discussion of spiritual issues on music days, compared to only fifteen percent of the time on days with no music. In addition, the participants expressed desire for music during 80% of the non-music sessions. These findings support the fact that music therapy is a preferred intervention, and may help to increase initiation of conversation.

#### *Conversational Life Review at End of Life*

The process of life review has been defined as a dyadic conversation process that covers an individual’s life in a systematic way to “encourage evaluation of memories and events (Haight, Bachman, Hendriz, Wagner, Meeks, & Johnson, 2003, p. 165).” When utilized in the context of systematic reminiscence therapy with older home-dwelling patients (Mastel-Smith, Binder, Malecha, Hersch, Symes, & McFarlane, 2006), researchers reported that once weekly life review sessions administered by a home care worker improved depression scores for 14 women 65 years and older.

Haight and colleagues (2003) compared life review to general reminiscence strategies in patients with dementia and measured patient mood and caregiver burden. They found significant improvements mood, as rated by the caregiver, for those patients who participated actively in systematic life review. Given the wide use of life review with both the elderly and people with dementia, it was considered a viable “alternative strategy” to music therapy for engaging hospice patients in the present study.

While existing research supports the utility of music in rehabilitation programs for people with communication disorders and generally in hospice settings, limited information exists regarding how music may influence specific communication behaviors of typical patients in hospice settings, or to what extent music engages participants actively during therapy in comparison to other activities. In particular, there is limited information about how incorporating music may affect patients’ predisposition, or willingness, to communicate and communication behaviors (i.e. length of utterance, pragmatic functions) at the end of life.

The purpose of this study was to compare the effects of music therapy and conversation-based life review sessions on quantity and quality of verbal communication of patients who are in a hospice setting and to explore differences in patients’ predisposition to communicate. In particular the following research questions were addressed for patients in hospice who do not have specific communication disabilities:

1. What is the effect of music therapy and conversation-based life review sessions on the quantity and nature of verbal productions produced in narrative picture description tasks?
2. What is the effect of music therapy and conversation-based life review sessions on the quantity and nature of verbal productions during an advice-giving conversation task?
3. What is the effect of music therapy and conversation-based life review sessions on the participants’ predisposition to communicate (as measured by the *Communication Predisposition Scale*)?

4. What is the effect of music therapy and conversation-based life review sessions on active participation during treatment sessions (as measured by time interval analysis)?

## METHOD

### *Participants*

Participants in this study were 10 terminally ill hospice patients all receiving services from Big Bend Hospice (BBH), a hospice agency based in Tallahassee, Florida serving seven counties in the vicinity. All participants in the study were over 18 years of age, lived in an assisted living facility/nursing home or home residence, had no previous exposure to hospice-based music therapy services, were able to communicate using natural speech, and had functional visual and hearing acuity. Participants were recruited through referrals from the hospice patient's interdisciplinary team. Referrals were made by nurses, social workers, and other music therapists to the primary researcher. A handout of eligibility requirements was distributed at various meetings, with the researcher giving a brief description of the participant criteria. Patients who were excluded from the study were those who could not speak, were mostly unintelligible, were non-responsive, or who were experiencing a great amount of pain on a consistent basis. Six men and four women participated in this study, ranging in age from 67 to 91, with a mean age of 82.5 years. Eight participants lived in various nursing facilities across Leon County Florida, and two lived in their home. Six of the ten participants had a diagnosis of debility unspecified, one had congenital heart failure, and three had cancer. Complete participant information is provided in Table 1.

### *Procedure*

After a referral was made, the researcher completed an assessment visit to determine whether or not the patient was appropriate for the study. This assessment visit also served to provide information about how to proceed with music therapy intervention by BBH music therapists once the study was completed. This assessment included an evaluation of the patient's needs and wants, as well as determination of physical and psychosocial goals for music therapy. A Big Bend Hospice Music Therapy Assessment form (Appendix A) was utilized to guide this assessment. During this session, the researcher obtained consent from all participants by explaining the nature of the study and reviewing the consent form (Appendix B). After the patients expressed understanding of the study procedures, they signed the consent form. None of the participants required an additional legal guardian signature.

Table 1

*Participant Demographics*

Participant	Age	Gender	Race	Diagnosis
1	77	Male	Caucasian	Debility Unspecified
2	90	Male	Caucasian	Debility Unspecified
3	91	Female	Caucasian	Debility Unspecified
4	91	Female	Caucasian	Congestive Heart Failure
5	90	Male	Caucasian	Debility Unspecified
6	66	Male	Caucasian	Lung Cancer
7	88	Female	Caucasian	Debility Unspecified
8	78	Male	Caucasian	Debility Unspecified
9	67	Male	African American	Lung Cancer
10	87	Female	Caucasian	Colon Cancer

After the assessment visit, the researcher scheduled two subsequent treatment sessions. One session included music therapy and the other incorporated conversation-based life review. All sessions were digitally audio-recorded using an Olympus mini-digital recorder placed approximately 2 feet from the participant. No microphone was used. All treatment sessions took place within a quiet, private location in the participant's preferred setting; most sessions took place in the participant's room. Both sessions for each participant occurred in the same setting. Only one participant had family present for each session; all other sessions incorporated just the researcher and participant. Each session, which was approximately 30 minutes in length, followed the following timeline:

*Session 1.* The clinician began with a brief greeting, after which a *Communication Predisposition Scale*, developed by the researcher, was administered either orally or in writing, based on the participant's capabilities. This five-item visual analog scale (Appendix C) had three questions on the first page, and two on the second page. The researcher asked the participants to point to the place on the visual analog scale that best represented their current state, with the left side of the scale being the "negative" and the right side being the "positive." After this was administered, the first conversational probe was given, consisting of a Norman Rockwell picture. As this picture was presented, the researcher said, "Tell me a story about this picture for about 30 seconds." Subsequently, the first advice topic was discussed for no more than 2 minutes. At that point, the researcher provided one of two interventions (music therapy or conversation-based life review) for no more than 10 minutes. Following the intervention, the *Communication Predisposition Scale* was re-administered, and the second set of probes was given, consisting of a second Norman Rockwell picture (30 seconds) and a second advice topic (2 minutes). At that point the session was concluded with a reminder about the day and time of the next session.

*Session 2.* The clinician began the second session with a brief greeting and then administered the *Communication Predisposition Scale* and a different Norman Rockwell picture (30 seconds). She then introduced a third advice topic for no more than 2 minutes. The second intervention then took place for no more than 10 minutes, after which the second set of probes was administered: the *Communication Predisposition*

*Scale*, the fourth Norman Rockwell picture, and the fourth advice topic. The researcher thanked the participant and concluded the session. After the conclusion of this study, 9 of the 10 participants went on to receive music therapy services from BBH.

### *Dependent Measures*

*Norman Rockwell Picture Description.* The quantity and quality of verbal output in the picture description narrative was measured through several measures consisting of the following: (1) total time elapsed, starting from the moment participants began speaking until the moment they ended; (2) total number of content unit (T-units), defined as a main clause plus any subordinate clauses or non-clausal structures attached to it (Hunt, 1965), and also explained as an utterance that cannot be further divided without the disappearance of its essential meaning; (3) number of prompts given by the researcher, such as the initial request for a story or phrases such as “*anything else?*”; (4) longest T-unit within the sample, calculated by number of words in the T-unit, and (5) average length of content units, calculated by dividing the total number of words by the total number of T-units (Menn, Ramsberger, & Helm-Estabrooks, 1994). Refer to Appendix D for further information and coding definitions.

*Advice-giving Task.* Participants were asked to comment on or provide guidance regarding various “life-problem” situations presented by the researcher (Appendix E). For example, the researcher said, “I am considering getting married. Will you give me some advice about marriage?” Participants’ responses were coded by measuring the following (which were defined as they were in the Norman Rockwell picture description task): (1) time elapsed, (2) total number of T-units, (3) average length of T-units, and (4) number of prompts by the researcher. In addition, during advice-giving conversations, researchers counted the number of imperatives, the number of on-topic T-units, coded as such if the content of the T-unit was related to the overall topic of the prompt, and the number of off-topic T-units (if the content of the T-unit did not directly relate to the prompt).

*Communication Predisposition Scale.* For the purposes of this study, the researcher developed a clinical survey tool entitled the *Communication Predisposition Scale* (Appendix C). This scale attempts to measure the participant’s predisposition and willingness to communicate at a particular point in time. The five questions for this scale

were adapted from items on the *Hospice Quality of Life Index-Revised (HQLI-R)* for hospice patients (McMillan & Weitzner, 1998). The *HQLI-R* is a 28 item, Likert-type scale that measures quality of life in the hospice setting. Multiple domains are covered and include physical, psychological, spiritual, social and financial well-being. From this questionnaire, this researcher modified one item from each relevant domain (desire to communicate, desire to socialize, comfort level, alertness, and emotional well-being) and created a visual analog scale for ease of use with terminally ill patients. It is a visual analog scale that requires the participants to rate their level of agreement with various questions related to issues that might influence willingness to communicate. Pictorial indicators are represented at each end of the scale, consisting of a “sad face” on the left and a “happy face” on the right. The scale itself is 14 centimeters long and participants indicate their level of agreement by pointing along the line. Linguistic indicators are also written at either end of the scale, such as “very little,” or “very much.” This measurement tool, the *Communication Predisposition Scale*, was administered without difficulty to 2 pilot participants in this study who appeared to understand the purposes of the scale and responded appropriately by indicating a point along the visual analog continuum following a brief explanation by the researcher.

*Participation Measurements during Interventions.* In addition to the probes administered before and after intervention, the researcher measured percent of participation for each participant during the intervention. This was done through a time interval measurement procedure. The researcher created a 10 minute long tape with 10 second intervals identified. While listening to an audio recording of the sessions, every 10 seconds the researcher noted whether or not the hospice patient was participating. The following behaviors were counted as participation: talking, vocalizations of pain or pleasure, singing, instrument playing (i.e., if they were shaking an instrument audibly or clapping), laughing. The following behaviors did not count as participation: coughs, throat clears, pauses in speech, and/or breaths.

### *Materials*

The researcher used fairly well known Norman Rockwell pictures as the picture description stimuli probes for the study. Pictures were selected for their narrative potential and have been used previously in narrative studies with patients with aphasia

(Lasker, Garrett, Hux, Eischied, and Moncrief, 1997). The following pictures were counterbalanced across participants' sessions:

1. *Three Umpires (Bottom of Sixth)*: In this picture, three umpires are standing together in a group and one is holding out his hand to feel the raindrops. In the background a scoreboard shows the inning and score, and two men are discussing the rain and presumably whether or not to cancel the ballgame.
2. *Doctor and the Doll*: In this picture, a doctor is using a stethoscope to "hear" a doll's heartbeat. The doll is being held by a young girl, who appears very concerned.
3. *After the Prom*: This picture shows a scene of a young couple sitting at a diner with the server behind the bar smelling the young lady's corsage. The young couple looks happy and proud. There is a police officer sitting to the side observing the scene.
4. *Sunday Morning*: In this picture, a mother and three children are dressed and going to church. The husband, meanwhile, tries to be inconspicuous while hiding in his chair, obviously avoiding going to church with his family.

The questions used for the advice-giving probes were adapted from a study by Dijkstra, Bourgeois, Youmans, Hancock (2005) that examined the advice-giving role and its effects on facilitating discourse in individuals with moderate-severe dementia. Dijkstra and colleagues coded transcripts of advice-giving situations and analyzed certain communicative behaviors in the conversations. They utilized a coding system that incorporated imperatives, on-topic statements, and off-topic statements, and the researcher borrowed these coding categories for the present study. The researchers defined "imperative" as the use of the word(s) "should," "you have to," "do this," all of which implied that the speaker was aware of the conventions associated with the advice-giving role. In addition to the three core advice topics of church, marriage, and children used in the Dijkstra study, two additional advice topics were chosen for the present study based on participants' gender. For female participants, the researcher asked for advice about mother/daughter relationships. For male participants, the researcher asked advice regarding buying a new car. All advice topics were tested on two pilot participants to ensure validity.

### *Independent Measures*

The clinician/researcher implemented two different types of intervention during sessions: music therapy and conversation-based life review. Each approach is described below:

*Music Therapy.* During the approximately 10 minute music therapy session, an appropriate music therapy protocol was implemented for the specific physical, emotional, or spiritual needs of the patient. Specific needs included reducing isolation through music, facilitating family interactions through music, increasing orientation, as well as other music therapy interventions that were appropriate for the patient. In addition, appropriate musical instruments were utilized during the music therapy interventions, such as a guitar for the researcher, and rhythm instruments for the participants to play. In general, the patients participated in the intervention by singing, playing small rhythm instruments, mouthing the words, actively listening, selecting songs, and commenting on songs.

*Conversation-based Life Review.* To contrast the music therapy intervention, the researcher utilized conversation-based life review as an alternate session type, which also lasted approximately 10 minutes in length. The researcher developed a list of questions that came in part from *The Book of Questions* (Stock, 1985). The researcher selected questions based on the patient's social and medical history. For example, if the patient said that he had served in the military, a question asked might relate to memories of his military service. Or for a patient who was separated from his wife because she lived in a separate facility as a result of end-stage dementia, the researcher chose not to ask a question about how he might improve his relationship with his wife. During the conversation-based life review session, questions were selected with the intent of eliciting the most conversation from the participants. The researcher selected all questions from the question bank in Appendix F. Questions were not included from outside this question bank. The number of questions asked was highly dependent upon how interactive the participants were during each session. The researcher's goal was to encourage conversation. If she found that reminiscence questions were not eliciting much patient responsiveness, she selected an opinion question. The researcher responded to the patient's statements with neutral

conversational probes, such as “Oh, really? Tell me more about that.” If the participant responded with extensive comments about their grandchildren, the researcher expanded upon this topic by asking appropriate follow-up questions. She continued posing questions for no more than 10 minutes.

#### *Pilot Procedures*

Preliminary trials of the protocol were performed using two appropriate hospice patients. All of the procedures were piloted prior to the initiation of actual data collection. The only adjustments made after piloting the entire protocol were in the actual administration of the dependent measures (Norman Rockwell and advice-giving tasks). The researcher refined the definitions of neutral conversation prompts after piloting the study. For example, rather than posing a specific follow-up question during the advice-giving probe, such as “So where exactly does your grandson live?” she altered the follow-up questions to be more neutral, such as “Oh, okay,” or “Anything else?”

#### *Design*

This study utilized a one-group pretest-posttest repeated measures design. Hospice patients participated in two sessions (one session per day) over a less than two week span to attempt to control for variables such as rapid decline in health, transfer of residences, or death. Within each session, the researcher (who served as both the music therapist and the life-review conversation facilitator), conducted either a music therapy session or a non-music therapy session, consisting of conversation based life review. The order of treatment approaches was counterbalanced so that 5 participants received music sessions first, and the other 5 received conversation sessions first.

#### *Data Coding and Analysis*

All sessions were transcribed from the digital audio recordings, and then all dependent measures were coded and analyzed. In addition, quantitative comparisons of scores on the *Communication Predisposition Scale* were measured. This was done by using a ruler to mark which centimeter the participant pointed to or marked on the line. These numbers were then rounded up to the closest whole number. Data was analyzed using a repeated measures 2x2 ANOVA procedure with time as one factor and treatment type as another factor. In addition, descriptive statistics (mean, range,

standard deviation) were obtained for all dependent variables. SPSS software was used for all data analysis.

### *Reliability*

To obtain transcription reliability, a volunteer transcribed three participant's sessions (30% of the total data). The volunteer used the same recorder and listening equipment as the researcher. The researcher compared transcripts word by word to calculate percentage of transcript agreement. Out of a total of 3421 words transcribed for the three participants, 3406 words were in agreement, which was calculated to be 99.5% reliable.

An independent coder, a graduate student in the Communication Disorders program, was trained to code for reliability for the study. Training occurred prior to coding over the course of several sessions until satisfactory training outcomes were achieved. As part of the training protocol, the coder reviewed a copy of the Coder Training sheet (Appendix D) with definitions and explanations of the variables and rules to follow when coding. The coder was then given transcripts of pilot treatment sessions to practice the coding procedure using the Data Summary Sheet (Appendix G). After completing the coding, the researcher compared the independent coder's results to her own, marking disagreements and making corrections. The researcher and the coder discussed any disagreements and revised any definitions as necessary. This process was repeated three times, until a criterion of at least 80% reliability was obtained on the pilot practice transcripts. After the coder and researcher were reliable on the pilot transcripts, the coder was given a copy of three participants' transcripts (30% of total participants) selected at random. Percentage agreement for all dependent variables for three participants was calculated by dividing the number of total number of data points that were agreed upon by the number of total data points for three patients. This resulted in 93% reliability for all coding categories combined. See Tables 2 and 3 for specific information on reliability for various coding categories.

Protocol reliability was assessed by an independent coder listening to audio recorded sessions for three participants chosen at random. The Protocol Reliability Data Sheet (Appendix H) was filled out for each session by both the researcher and coder and was compared for agreement. Adherence to time protocols, as well as acceptable

and unacceptable cues or prompts, were monitored for consistency and acceptability. See Appendix D for the definitions used by the coder and the researcher. On all trials, 100% agreement was attained for all coding categories.

In addition, the coder listened to 30% of the music therapy and conversation-based life review interventions (on the same equipment the researcher used) to verify percent of participation agreement. This reliability measure was found to be in 95% agreement using the interval coding system.

Table 2

*Reliability for Picture Narratives Codes for Three Participants*

Dependent Measure	Researcher	Coder	Percent of agreement
number of t-units	42	51	82%
number of prompts	20	20	100%
longest t-unit	178	174	97%
average length of t-units	116.1	111.4	95%

Table 3

*Reliability for Advice-giving Codes for Three Participants*

Dependent Measure	Researcher	Coder	Percent of agreement
number of imperatives	6	5	83%
number of on topic	59	58	98%
number of off topic	3	4	75%
number of t-units	72	72	100%
Average length of t-units	105.5	103.8	98%
Number of prompts	24	24	100%

Total percent of agreement = 92.8%

## RESULTS

Four research questions were investigated to compare the effects of music therapy and conversation-based life review sessions on quantity and quality of verbal communication of patients who were in a hospice setting, as well as to explore differences in patients' predisposition to communicate. In particular, the first question explored the effect of music therapy and conversation-based life review sessions on the quantity and nature of verbal productions produced in narrative picture description tasks; the second question looked at the quantity and nature of verbal productions during an advice-giving conversation task; the third dealt with the participants' predisposition to communicate (as measured by the *Communication Predisposition Scale*); and the fourth investigated the participants' productions during intervention sessions (as measured by percent of participation).

To answer the first research question, dependent measures for the narrative picture description task were analyzed using a repeated measures 2x2 ANOVA procedure with time as one factor and treatment type as another factor. The values for total time elapsed, total number of T-units, conversation prompts, longest T-unit, and average T-unit length were analyzed. Descriptive statistics (mean, standard deviation, range) on these variables are shown in Table 4 and Table 5. Table 6 presents the results of the main effect for time for these variables. Table 7 presents the results of the main effect for treatment type for these variables. Table 8 presents results of the interaction analyses for these variables. A statistically significant main effect for time was found for the total number of T-units before and after music therapy and conversation-based life review ( $F(1,9) = 7.22, p = .025, \text{partial } \eta^2 = .445$ ) indicating a moderate effect size. A statistically significant main effect for time was shown for the average length of T-units before and after music therapy and conversation-based life review ( $F(1,9) = 7.699, p = .022, \text{partial } \eta^2 = .461$ ) indicating a moderate effect size.

The second research question investigated the effect of music therapy and conversation-based life review sessions on the quantity and nature of verbal productions during an advice-giving conversation task. Dependent measures for the advice-giving conversation task were analyzed using a repeated measures 2x2 ANOVA

Table 4

*Group means of picture description task before and after music therapy intervention*

	Before Music			After Music		
	Mean	Standard deviation	Range	Mean	Standard deviation	Range
Time elapsed	32.2	7.5	(25-52)	32.4	3.6	(30-40)
T-units	4.3	2.4	(1-7)	5.4	2.9	(2 -11)
Conversation prompts	2.2	1.4	(1-6)	1.5	.8	(1-3)
Longest T-unit	12.2	3.9	(6-17)	11.4	5	(3 -20)
Average length of T-units	7.6	1.4	(6-9)	7.3	3	(3 -15)

Table 5

*Group means of picture description task before and after conversation-based life review*

	Before Music			After Music		
	Mean	Standard deviation	Range	Mean	Standard deviation	Range
Time elapsed	29.4	11.1	(12-47)	30.1	11.8	(12-55)
T-units	3.6	1.4	(2-6)	2.9	2.0	(1-7)
Conversation prompts	1.8	.6	(1-3)	1.8	.8	(1-3)
Longest T-unit	11.4	3.9	(6-18)	13.3	6	(7-26)
Average length of T-units	8.5	2.6	(3-14)	10.3	3.6	(6-19)

Table 6

*Main effects for time: before and after interventions*

Picture Description Narrative				
	F-statistic	p-value	df	Effect Size (partial eta squared)
Total Time Elapsed	1.094	.323	(1,9)	.108
Number of T-units	7.22	.025	(1,9)	.445
Conversation Prompts	.023	.882	(1,9)	.003
Longest T-unit	.184	.678	(1,9)	.020
Average Length T-units	7.699	.022	(1,9)	.461
Advice-Giving Conversation				
	F-statistic	p-value	df	Effect Size (partial eta squared)
Time Elapsed	.038	.849	(1,9)	.004
Imperatives	1.328	.279	(1,9)	.129
On-Topic T-units	1.782	.215	(1,9)	.165
Off-Topic T-units	.265	.619	(1,9)	.029
Number of T-units	2.884	.127	(1,9)	.239
Average Length T-units	.226	.646	(1,9)	.024
Conversation Prompts	.024	.879	(1,9)	.003
Communication Predisposition Scale				
	F-Statistic	p-value	df	Effect Size (partial eta squared)
Average Score	.028	.883	(1,9)	.003

Table 7

*Main effects for treatment type: music therapy and conversation-based life review sessions*

Picture Description Narrative				
	F-statistic	p- value	df	Effect Size (partial eta squared)
Total Time Elapsed	.062	.809	(1,9)	.007
Number of T-units	.064	.806	(1,9)	.007
Conversation Prompts	1.995	.191	(1,9)	.181
Longest T-unit	.309	.592	(1,9)	.033
Average Length T-units	1.929	.198	(1,9)	.176
Advice-Giving Conversation				
	F-statistic	p- value	df	Effect Size (partial eta squared)
Time Elapsed	4.095	.074	(1,9)	.313
Imperatives	.545	.479	(1,9)	.057
On-Topic T-units	.594	.461	(1,9)	.062
Off-Topic T-units	2.25	.168	(1,9)	.200
Number of T-units	.009	.928	(1,9)	.001
Average Length T-units	.054	.821	(1,9)	.006
Conversation Prompts	.184	.678	(1,9)	.020
Communication Predisposition Scale				
	F-statistic	p- value	df	Effect Size (partial eta squared)
Average Score	4.494	.063	(1,9)	.333

Table 8

*Interaction effects for time x treatment type*

Picture Description Narrative				
	F-statistic	p- value	df	Effect Size (partial eta squared)
Total Time Elapsed	.002	.966	(1,9)	0
Number of T-units	1.95	.196	(1,9)	.178
Conversation Prompts	1.995	.191	(1,9)	.181
Longest T-unit	.877	.373	(1,9)	.089
Average Length T-units	1.567	.242	(1,9)	.148
Advice-giving Conversation				
	F-statistic	p- value	df	Effect Size (partial eta squared)
Time Elapsed	.001	.982	(1,9)	.000
Imperatives	.130	.726	(1,9)	.014
On-Topic T-units	.015	.906	(1,9)	.002
Off-Topic T-units	.000	1.000	(1,9)	.000
Number of T-units	.021	.887	(1,9)	.002
Average Length T-units	2.15	.177	(1,9)	.193
Conversation Prompts	1.83	.209	(1,9)	.169
Communication Predisposition Scale				
	F-statistic	p- value	df	Effect Size (partial eta squared)
Average Score	.804	.393	(1,9)	.082

procedure with time as one factor and treatment type as another. The values for total time elapsed, number of imperatives, number of on-topic T-units, number of off-topic T-units, average length of T-units, and number of conversation prompts were analyzed. Table 6 presents the results of the main effect for time for these variables. Table 7 presents the results of the main effect for treatment type for these variables. Table 8 presents results of the interaction analyses for these variables. None of these analyses yielded statistically significant results at the  $p < .05$  level.

The third research question examined the effect of music therapy and conversation-based life review sessions on the participants' predisposition to communicate as measured by the visual analog *Communication Predisposition Scale*. Each participant responded to the scale on four occasions (before and after music therapy and before and after conversation-based life review). Because the average score for the entire scale was not statistically significant for main effects of time, for main effects of treatment type, or for a time x treatment type interaction, each variable for the scale was analyzed separately using a 2X2 ANOVA. Results are seen in Table 9 for each response item on this scale. Analysis yielded a significant interaction for time x treatment type for the response item, "Right now how much do you feel like talking?" ( $F(1, 9) = .004, p = .017, \text{partial eta squared} = .484$ ) with a moderate effect size. Figure 1 illustrates the means for this variable and the interaction effect. As seen in Figure 1, for conversation-based life review, no differences were noted between group means before and after intervention. For music therapy, the group mean response increased from an average of 9 to 11.5.

The fourth and final research question looked at the effect of music therapy and conversation-based life review sessions on active participation during interventions as measured by time interval analysis. These data were analyzed using a paired t-test analysis. While no statistically significant differences were found, data indicate that 9 out of 10 participants were actively engaged at least 20% of the time during the actual intervention. In addition, 6 of the 10 hospice patients participated actively at least 50% of the time during at least one of the interventions. These results are shown in Table 10 and illustrated graphically in Figure 2.

Table 9

*Individual variables from Communication Predisposition Scale*

Time				
	F-Statistic	df	p-value	Effect Size (partial eta squared)
Talking	3.265	(1,9)	.104	.266
Being with People	.143	(1,9)	.714	.016
Comfort	.251	(1,9)	.628	.027
Awake	.484	(1,9)	.504	.051
Peaceful/Content	1.087	(1,9)	.324	.108
Treatment Type				
	F-Statistic	df	p-value	Effect Size (partial eta squared)
Talking	1.271	(1,9)	.289	.124
Being with People	2.729	(1,9)	.133	.233
Comfort	.825	(1,9)	.387	.084
Awake	.010	(1,9)	.921	.001
Peaceful/Content	1.789	(1,9)	.214	.166
Time x Treatment Interaction				
	F-statistic	p- value	df	Effect Size (partial eta squared)
Talking	8.459	(1,9)	.017	.484
Being with People	.050	(1,9)	.829	.005
Comfort	.123	(1,9)	.733	.014
Awake	.016	(1,9)	.903	.002
Peaceful/Content	.004	(1,9)	.952	.000

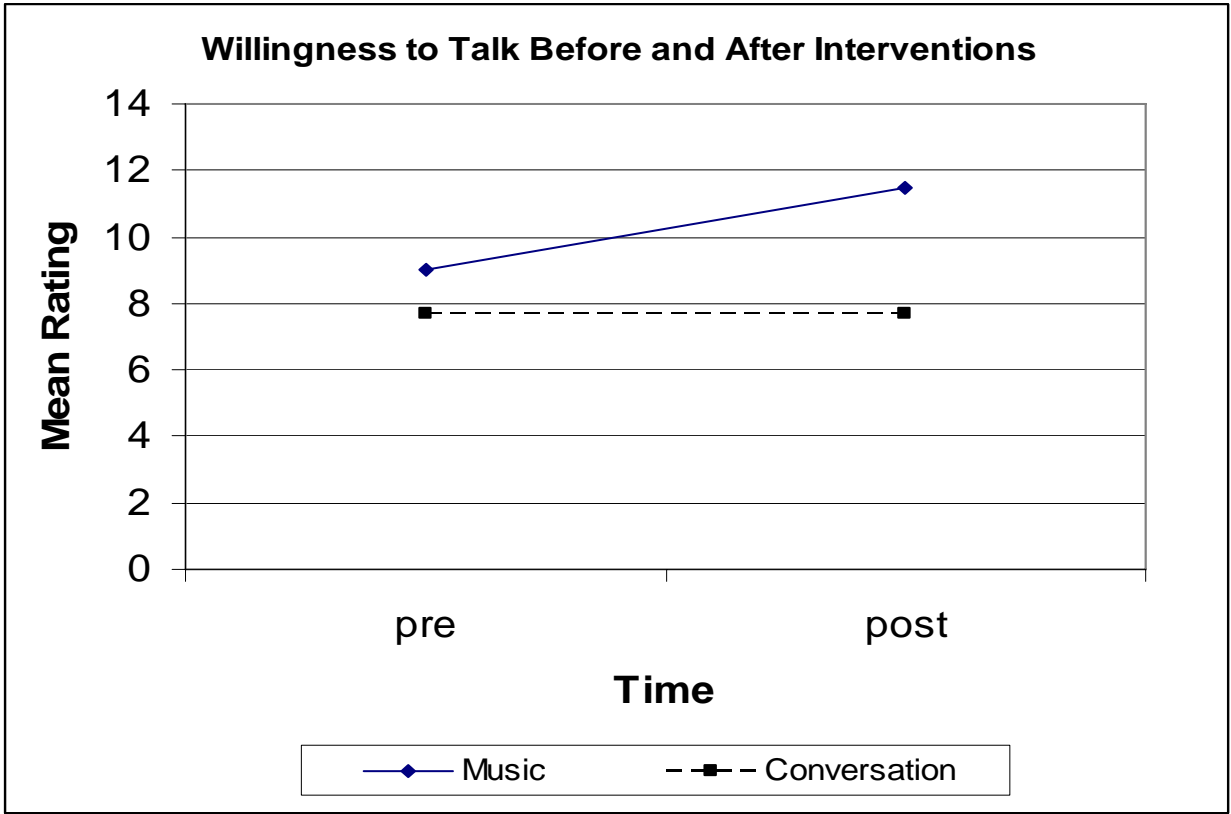


Figure 1  
Willingness to talk before and after interventions

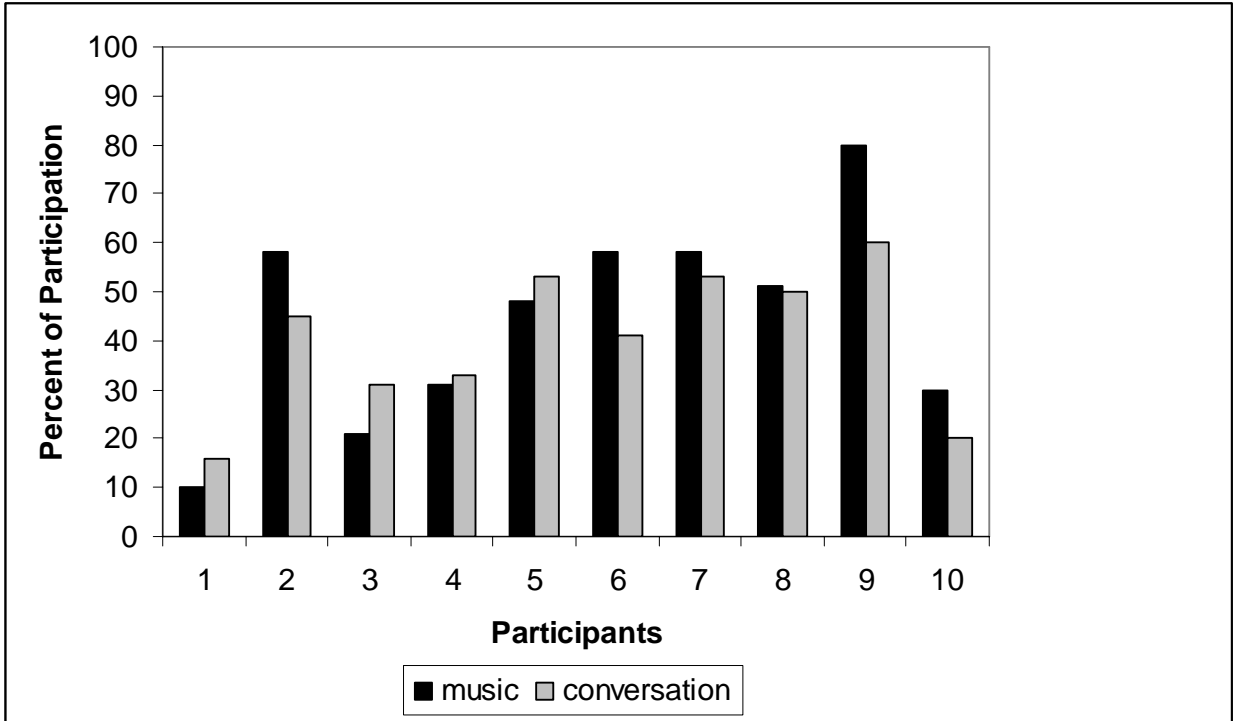


Figure 2

Percent of participation during intervention

Table 10

*Percent of participation during intervention*

Participant	Participation in Music	Participation in Conversation
1	10	16
2	58	45
3	21	31
4	31	33
5	48	53
6	58	41
7	58	53
8	51	50
9	80	60
10	30	20
Mean	44.5	40.2
Standard Deviation	21.07	14.79

In addition to statistical analysis, the researcher selected three highly salient variables to analyze across participants. The “key” measures were based on the researcher’s clinical judgment and prior established research in palliative care. These measures were selected because it was hypothesized that they would be sensitive to changes in performance across interventions. The three “key” measures were the following: number of conversational prompts required for picture description, total advice-giving time, and average *Communication Predisposition Scale* differences. The researcher classified responses for each participant as demonstrating positive change, no change, or negative change for pre- and post-interventions. These data are shown in Tables 11 and 12.

Based on these data, the researcher classified two types of respondents – positive respondents and mixed respondents. The researcher defined positive respondents as individuals who had generally improved scores or demonstrated no change in scores on these salient measures following interventions. Participant #2 was the only entirely positive respondent demonstrating positive changes in advice time and Communication Predisposition score but no change in conversational prompts across both interventions. All other participants had mixed results when analyzed across the three salient variables. This means that one intervention resulted in positive or no changes and the other intervention resulted in one or more negative changes. An example of this can be seen in Participant #9. For music therapy intervention, Participant #9 had no changes for conversational prompts in the picture description task, negative changes for total time of advice giving, and positive changes for the communication scale within the music therapy intervention. For conversation-based life review, Participant #9 had no changes for conversational prompts in the picture description task, positive changes for total time of advice giving, and positive changes for the communication scale within the conversation-based life review sessions. There was only one participant, Participant #6, who demonstrated no changes before and after music sessions and negative changes before and after conversation-based life review.

In summary, individual analysis of these results indicates that a majority of participants demonstrated positive or no changes in communication performance after music intervention, whereas only four participants demonstrated positive or no changes

after conversation intervention. Again, it is important to note no participant responded negatively to both interventions. Additionally, there were no substantial distinctions between types of patients according to order of intervention (music first or conversation first) or place of residence (home or facility).

Table 11

*Analysis of salient variables across participants*

Participant	Music			Conversation		
	Picture description conversational prompts	Advice Time	<i>Communication Predisposition Scale Score</i>	Picture description conversational Prompts	Advice Time	<i>Communication Predisposition Scale Score</i>
1	+	+	+	~	-	+
2	~	+	+	~	+	+
3	~	-	+	+	+	+
4	+	~	~	~	-	-
5	~	+	+	-	+	~
6	~	~	~	~	-	-
7	+	+	+	-	+	~
8	+	+	~	+	~	-
9	~	-	+	~	+	+
10	+	+	-	+	+	+

Key:

+ = positive change

~ = no change

- = negative change

Table 12

*Summary of findings for individual analysis for all participants*

Participant	Music	Conversation
1	all numbers indicate positive changes	advice time negative change, others positive or no change
2	all numbers indicate positive or no changes	all numbers indicate positive or no changes
3	advice time negative change, others positive or no change	all numbers indicate positive changes
4	all numbers indicate positive or no changes	all numbers indicate negative or no changes
5	all numbers indicate positive or no changes	conversational prompts negative change, others positive or no change
6	no changes	all numbers indicate negative or no changes
7	all numbers indicate positive changes	conversational prompts negative change, others positive or no change
8	all numbers indicate positive or no changes	communication scale negative changes, others positive or no change
9	advice time negative change, others positive or no change	all numbers indicate positive or no changes
10	communication scale negative changes, others positive changes	all numbers indicate positive changes

## DISCUSSION

The purpose of this study was to compare the effects of music therapy and conversation-based life review sessions on the quantity and quality of verbal communication of patients who were in a hospice setting, and to explore differences in patients' predisposition to communicate. Four research questions were posed to compare the two intervention types: music therapy and conversation-based life review.

### *Effect of Interventions on Picture Description Narratives*

The statistically significant main effect for time for number of T-units in picture description and average length of T-units suggests that, while differential effects between music and conversation treatments were not noted, both interventions appeared to increase the number and length of T-unit production in hospice patients' picture description. This suggests that engaging patients at the end of life in an activity, whether it is music or conversation based, may result in more verbal output; however, results are far from conclusive, given the limited nature of the picture description task.

### *Effect of Interventions on Advice-Giving Tasks*

Analysis of dependent variables for advice-giving yielded no statistically significant results. This suggests that, either the measures selected were not sufficiently sensitive to detect treatment effects or that no effects occurred.

### *Effect of Interventions on Communication Predisposition Scale*

While average scores for the entire scale were not statistically significant for main effects of time, treatment type, or time x treatment type interaction, a statistically significant result was noted for participant self-ratings of "willingness to talk" after music therapy vs. conversation-based life review. This suggests that music therapy may perhaps increase hospice patients' desire to communicate with another person. Previous research (McCroskey, 1992) demonstrated that a self-reporting scale for "willingness to communicate" was valid and reliable. It may be an effective clinical tool to ask patients whether or not they feel like talking prior to engaging in an activity.

### *Results of Participation Analysis during Intervention*

The results from the timed interval analysis for percent of participation offer some insight into how to engage hospice patients. The results show that, during both

interventions, 9 out of 10 participants were actively engaged at least 20% of the time, with half the participants engaging in at least one intervention over 50% of the time (Figure 2). This is an exciting finding for the terminally ill population, because involving patients (especially those patients living in skilled nursing or assisted living facilities) in any type of activity is often difficult for caregivers and clinicians. For these 10 hospice patients, active participation occurred regardless of the type of intervention. This finding speaks to the benefit of continuing to engage patients in palliative care, regardless of terminal diagnosis, hypothesized responsiveness, or residential setting. In addition, it suggests the need for patient-specific intervention, requiring individualized analysis of hospice patients' communication preferences and treatment needs.

One potential reason for the relatively high participation level may be related to the nature of the advice-giving task presented as a probe prior to the treatment itself. Many hospice patients are asked frequently about their own status, but have limited opportunities to offer useful advice to another person. This act, in and of itself, may be stimulating and refreshing to some people at end of life. Kubler-Ross (1969) reflected on why dying patients were so willing to participate with her. She stated that perhaps it is the patient's need to leave something behind, to give something of themselves, that is motivating. If patients feel their role is to teach something (Kubler-Ross, 1969), they might be more willing to engage with caregivers and family members alike.

#### *Variability in Participants' Responses*

The overall lack of significance obtained from statistical analyses may be related to the heterogeneity of the participants, which led to wide-ranging responses. This is also evident from the range of data points and the standard deviations. To illustrate how varied the responses were, excerpts from the picture description tasks for the "Sunday Morning" picture stimulus are compared below. Participant #3 required several prompts to say very little, while Participant #9 required only clarification to provide a detailed description of the picture:

Participant #3

##### *Norman Rockwell #1*

R: We'll start again, okay, so maybe you can see a little better now. Okay, so whenever you're ready – can you see it better?

P: I don't know any of them

R: Okay, just go ahead and try to tell me about that picture

P: It looks as if they're going to church or Sunday school.

R: What else?

P: No singer

R: Okay thank you

Participant #9

Norman Rockwell #1

R: Okay, now I'm going to show you this picture and I'd like for you to tell me a story about it for about 30 seconds. And I'm going to record you.

Okay?

P: Alright, you want me to tell you what's going on in the store here?

R: Yes, just tell me a story about it for about 30 seconds.

P: Okay. There seems to be a settled, sitting down in a chair with some papers and he's, he's either reading or wasting time. Uh, he's looking off and there's some people behind him, uh, like they're going to a movie, uh, and uh, they're waiting on their ticket or they're waiting for someone to let them in. I don't know where this is or what room it's in, but they are going up, there's a girl, a little boy, and this man. But this man is sitting and the rest of them are standing there.

R: Okay, thanks.

Another example of how varied the responses were is demonstrated in the following excerpts from the advice-giving task:

Participant #10

Advice Question

R: Now I'd like to get your advice. I'm thinking about having children one of these days. Is there any advice you can give me about children?

P: No... I don't think I would.

R: No advice?

P: Well, just uh, yeah, I think XXX. Try to stay with them as long as you can.

R: Anything else?

P: Uh...

R: Okay great.

Participant # 9

Advice Question

R: I want to get your advice on one more thing, before I go. Um, I'm thinking about having children one day. I think I'd like to have some children. Is there any advice you can give me about children?

P: Yep.

R: What is it?

P: First thing is having them. Knowing how many you want to have. Some people want one, two, some want a lot. Some people don't want children. But, in my surroundings, me and my wife, we had nine. And, we raised all our children, all but one, one of our sons got killed. We raised everyone of them, and we raised them in a way that anywhere they go, somebody know them, somebody liked them. They didn't say there go old, XXX, she bad, this person bad, and when you're raising the children you got to have that love. When you have that love then, you doing one of the best things that God has put on Earth. For all man and female because the word love is what holds us together. Man and female, woman, boy or girl, that word love. If you don't have the word love in your heart, if your heart have feeling toward other people, then what's the difference in raising children?

Again, the advice-giving excerpts above illustrate the difference in both quality and quantity of communication between two types of responders. Participant #10 required many conversational prompts to produce a response, whereas Participant #9 only required two prompts to provide a lengthy response. It is interesting to note this particular participant (#9) responded for a total of approximately 4 minutes to this one advice topic. However, only the data that was within the 2-minute time allotment was transcribed and coded.

Some people were generally higher responders than others for the *Communication Predisposition Scale* for both interventions. In particular, Participants 5,

6, 7, and 9 rated themselves as 7 or higher (50% of the scale length) for both interventions. Participants 2, 3, 4, and 10 rated themselves 7 or higher only twice per session. This may indicate that some patients have innate tendencies to select particular areas of the scale or that they responded differentially to the interventions.

The results of this study are consistent with the findings of Brotons and Koger (2000) who found that for people with DAT (Dementia of the Alzheimer's type), speech content and fluency improved more after music therapy than after conversational sessions. Similar results were found in the current study. After music therapy sessions, participant's self-ratings of willingness to communicate, as measured by the *Communication Predisposition Scale*, were higher than after conversation-based life review sessions. In addition, their overall output (regardless of intervention type) increased for T-units and T-unit length. The results of this study are also parallel to the findings of Wlodarczyk (2003) who revealed that more hospice patients initiated conversations of spiritual issues following music therapy visits than days without music therapy. This suggests willingness to communicate more after music, which is what the current study revealed as well.

This study had several limitations, some of which are inherent when working with terminally ill hospice patients and some related to study design. The most obvious limitation was the number of participants. Due to the limited power of this study, it was difficult to demonstrate significant differences between the two interventions across participants, especially given the heterogeneity of the participants. Few hospice patients met the criteria for participation within set time constraints; therefore, it was not feasible to attain more than 10 patients. The criteria excluded those who could not speak verbally or for whom death was imminent. In addition, the conversation measures used for this study, particularly picture description and advice-giving, may not be sufficiently sensitive to demonstrate changes in communication behavior among this population. In addition, the only variable on the *Communication Predisposition Scale* found to be statistically significant was a self-rating of desire to talk. Other response items on the scale may be insensitive to the salient factors contributing to predisposition to communicate.

The limitations do not overshadow the benefits of the design of this study. Researchers come up against many variables when working within a medical environment, especially within a hospice setting. For example, mortality within the hospice setting can require data to be eliminated as Hilliard (2003) found when working with terminally ill patients. Hilliard (2003) analyzed data from two sessions rather than four. In the current study, however, changes over time were effectively controlled for by taking data before and after intervention within a single session as well as by seeing people within a 2-week time span (repeated measures design).

Many questions have emerged from this initial study which explored the quality and quantity of hospice patients' communication after music therapy and conversation-based life review interventions. Future research should include larger sample sizes to obtain greater statistical power within the data. Further end of life research could also include investigating whether there are differences in communication between certain terminal illnesses such as cancer and non-cancer patients or focusing on differences in communication between home and facility-based hospice patients.



## APPENDIX B

### HUMAN SUBJECTS COMMITTEE APPROVAL LETTER AND CONSENT FORMS



Office of the Vice President For Research  
Human Subjects Committee  
Tallahassee, Florida 32306-2763  
(850) 644-8633 · FAX (850) 644-4392

#### APPROVAL MEMORANDUM

Date: 12/19/2005

To:

**Jessica Brown**  
714 E. Jefferson St.  
Tallahassee, FL 32301

Dept.: **COMMUNICATION DISORDERS**

From: **Thomas L. Jacobson, Chair**

A handwritten signature in black ink, appearing to read "Thomas Jacobson".

Re: **Use of Human Subjects in Research**  
**The effect of music on the predisposition of hospice patients to communicate**

The forms that you submitted to this office in regard to the use of human subjects in the proposal referenced above have been reviewed by the Human Subjects Committee at its meeting on **8/10/2005**. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals which may be required.

If the project has not been completed by **8/9/2006** you must request renewed approval for continuation of the project.

You are advised that any change in protocol in this project must be approved by resubmission of the project to the Committee for approval. The principal investigator must promptly report, in writing, any unexpected problems causing risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols of such investigations as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Protection from Research Risks. The Assurance Number is IRB00000446.

cc: Joanne Lasker  
HSC No. 2005.613

### Informed Consent Form

My name is Jessica Brown and I am a graduate student in the Department of Communication Disorders at Florida State University and a music therapist at Big Bend Hospice. I am conducting a research study to investigate the effect of music on the predisposition of hospice patients to communicate.

I am requesting your participation in this study, which is completely voluntary. Your participation will involve looking at pictures, completing a survey, and talking with me before and after each session. Each session will be 30-40 minutes in length and will occur within a week's period. One session will involve music and the other will be without music. You may choose not to participate in this study at any time. If you choose not to participate, you will still be entitled to all hospice services, including music therapy, as deemed appropriate by the hospice team. If desired, you will still receive music therapy services after the study is completed.

There are no foreseeable risks or discomforts as a result of your participation in this study. If any discomfort arises as a result of this study, you may speak with me or any other hospice team member.

There may be no direct benefits from your participation in this study. However, you would be assisting in the collection of information to promote communication for people in a hospice setting.

The results of the research study may be published, but your name will not be used. Confidentiality will be maintained to the extent allowed by law. The session will be audiotaped or videotaped to obtain the most accurate data. These tapes and written surveys will be kept in a locked file cabinet in the office of Dr. Joanne Lasker and will not be available to anyone not directly involved in the study, and will be destroyed on or before December 31, 2006.

Any questions you have concerning the research study or your participation in it, before or after your consent, will be answered by Jessica Brown (850) 545-7647, or Dr. Joanne Lasker, Supervising Professor, Florida State University Department of Communication Disorders, (850) 644-9465.

If you have questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633.

Sincerely,

Jessica L. Brown

I have read and the above informed consent form. I give my consent to participate in this study and to be videotaped or audiotaped. I understand that I may withdraw my consent and discontinue participation at any time without penalty or loss of benefits to which I may otherwise be entitled. In signing this consent form, I am not waiving any legal claims, rights or remedies. A copy of this consent form will be offered to me.

Signature \_\_\_\_\_ Date \_\_\_\_\_



### Informed Consent Form for Legal Guardian

My name is Jessica Brown and I am a graduate student in the Department of Communication Disorders at Florida State University and a music therapist at Big Bend Hospice. I am conducting a research study to investigate the effect of music on the predisposition of hospice patients to communicate.

The patient's participation in this study is completely voluntary and will involve looking at pictures, completing a survey, and talking with me before and after each session. Each session will be 30-40 minutes in length and will occur within a week's period. One session will involve music and the other will be without music. The patient may choose not to participate in this study at any time. If he or she chooses not to participate, they will still be entitled to all hospice services, including music therapy, as deemed appropriate by the hospice team. If desired, the patient will still receive music therapy services after the study is completed.

There are no foreseeable risks or discomforts as a result of the patient's participation in this study. If any discomfort arises as a result of this study, they may speak with me or any other hospice team member.

There may be no direct benefits from the patient's participation in this study. However, he or she would be assisting in the collection of information to promote communication for people in a hospice setting.

The results of the research study may be published, but the patient's name will not be used. Confidentiality will be maintained to the extent allowed by law. The session will be audiotaped or videotaped to obtain the most accurate data. These tapes and written surveys will be kept in a locked file cabinet in the office of Dr. Joanne Lasker and will not be available to anyone not directly involved in the study, and will be destroyed on or before December 31, 2006.

Any questions you have concerning the research study or the patient's participation in it, before or after your consent, will be answered by Jessica Brown (850) 545-7647, or Dr. Joanne Lasker, Supervising Professor, Florida State University Department of Communication Disorders, (850) 644-9465.

If you have questions about the patient's rights as a participant in this research, or if you feel the patient has been placed at risk, you can contact the Chair of the Human Subjects Committee, Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633.

Sincerely,

Jessica L. Brown

I have read and the above informed consent form. I give my consent for the patient to participate in this study and to be videotaped or audiotaped. I understand that I may withdraw my consent and discontinue participation at any time without penalty or loss of benefits to which the patient may otherwise be entitled. In signing this consent form, I am not waiving any legal claims, rights or remedies. A copy of this consent form will be offered to me.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Patient's name \_\_\_\_\_



## Letter of Assent for Hospice Patients

My name is Jessica Brown and I am a graduate student in the Department of Communication Disorders at Florida State University and a music therapist at Big Bend Hospice. I am conducting a research study to investigate the effect of music on the predisposition of hospice patients to communicate. I am requesting your participation in this study, which is completely voluntary. Your participation will involve looking at pictures, completing a survey, and talking with me before and after each session. You can either write your answers to the survey yourself or you may choose someone else to write them for you. If we talk together, I will audiotape or videotape our interview. All of the information you give me will be kept confidential to the extent allowed by law.

If you get tired or frustrated during this study, you may choose not to participate at any time. If you choose not to participate, you will still be entitled to all hospice services, including music therapy, as deemed appropriate by the hospice team. If desired, you will still receive music therapy services after the study is completed.

If you have any questions, I would be happy to answer them now or during our visits at any time.

**VOLUNTARY ASSENT:** My signature below means that this study has been explained to me and my questions have been answered by Jessica Brown. I have freely agreed to participate in this study.

Signature \_\_\_\_\_ Date \_\_\_\_\_



APPENDIX C  
COMMUNICATION PREDISPOSITION SCALE

Communication Predisposition Scale

1. How much do you feel like talking right now?

Not at all

Very much

2. Right now, how much do you feel like being with people?

Not at all

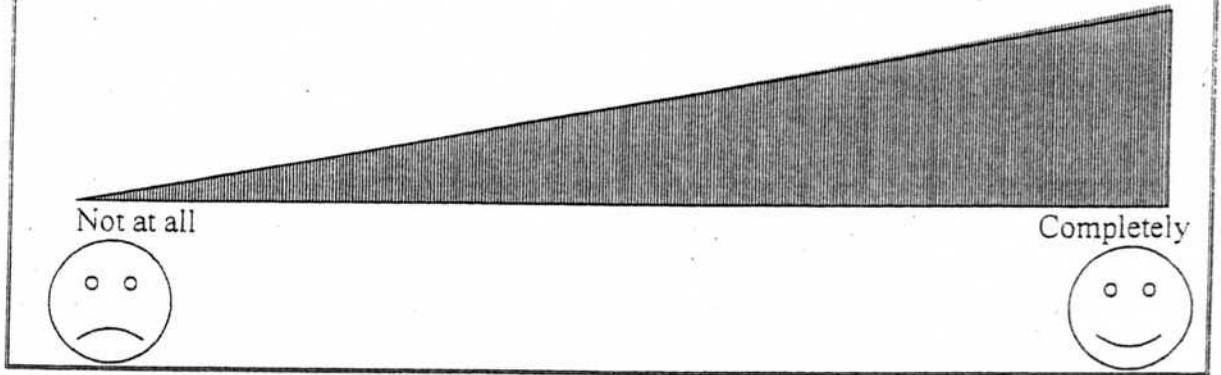
Very much

3. How comfortable do you feel right now?

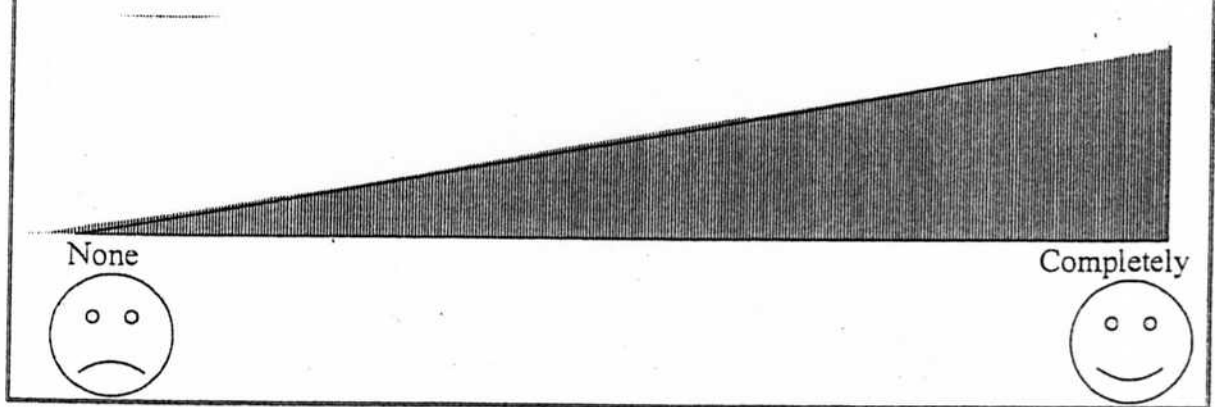
Not at all

Completely comfortable

4. How awake do you feel right now?



5. At this moment, how peaceful/content do you feel?



## APPENDIX D

### CODER TRAINING SHEET

#### **Definitions:**

##### **t-unit:**

- An utterance that cannot be further divided without the disappearance of its essential meaning. A main clause plus any subordinate clauses or non-clausal structures that are attached to it (Hunt, 1965)

**Prompt:** giving a cue; to assist with a reminder; remind. Example: “*What else?*” “*Any more?*”

**Average length of t-units:** Total number of words in t-units/Number of t-units

**Imperatives:** “use of the word “should”, “you have to”, “do this”, all of which imply that the speaker is aware of the convention associated with the advice-giving role to direct the conversation partner toward a suggested action or instruction. “ (Dijkstra, Bourgeois, Youmans, Hancock, 2005)

**On-topic:** if the content of statement is related to the overall topic of the prompt

**Off-topic:** if the content of the statement did not directly relate to the prompt

##### **\*Prompts with acceptable comments:**

- Uh huh/Okay
- Tell me more about that
- Oh
- Anything more?
- You’re doing well/fine/great, etc
- Repeating what the participant said

##### **\*Unacceptable comments:**

- Adding anything extra to what they’re saying – expanding on what they’re saying in any way
- Providing a word for them

#### **Definition of Engagement within Intervention (music and conversation)**

- **Talking.** Do not count if you can not hear something coming from their mouth (like pauses in speech, breaths, etc)
- Grunts in pain or pleasure (oohs, ahs, ows, etc)
- **Singing:** Same as talking above
- **Instrument play:** if they are shaking an instrument audibly, clapping, etc
- Laughing

*Does NOT count:* coughs, throat clears, etc

## APPENDIX E

### SAMPLE ADVICE TOPICS

Advice topics will be presented in the following way:

All:

1. Marriage: "I am considering getting married. Will you give me some advice about marriage?"
2. Children: "I'm thinking about having children. Is there any advice you can give me about children?"
3. Church: "I've been wondering if I should change churches. What kind of advice can you give me about church?"

For men:

4. New car purchase: "I have had my car for six years; do you think it's time to get a new car? Do you have any advice about cars?"

For women:

5. Relationship dilemmas: "My mother and I disagree about a lot of things. Do you have any advice you can give me about mother/daughter relationships?"

## APPENDIX F

### CONVERSATION-BASED LIFE REVIEW QUESTIONS

#### **Guidelines:**

The conversation-based life review sessions will be approximately 10 minutes in length. Questions will be selected from the following bank of questions depending on the appropriateness for the patient, and were taken from *The Book of Questions* by Stock (1985). Only minimal conversation fillers will be used.

#### **Question Bank:**

##### *Opinion Questions:*

1. Do you think the world will be a better or a worse place 1000 years from now?
2. Which gender do you think has it easier in our culture? Why?
3. What would constitute a perfect evening for you?
4. Whom do you admire most? In what ways does that person inspire you?
5. Given the choice of anyone in the world (dead or alive), who would you choose as your dinner guest?
6. Is it easy for you to accept help when you need it? Will you ask for help?
7. Would you like to be famous? For what?
8. Who is the most important person in your life? Is there anything you could do to improve that relationship?
9. What do you most value in a relationship?
10. What do you like most about your life? Least?

##### *Reminiscence questions:*

11. What is your most treasured memory?
12. What is the greatest accomplishment of your life?
13. For what in your life do you feel most grateful?
14. Is there something you've dreamed of doing for a long time?
15. If you could change anything about the way you were raised, what would it be?
16. What has been your biggest disappointment in life?

**APPENDIX G**  
**DATA SUMMARY SHEET**

**SESSION 1**

**Norman Rockwell #1:**

Time elapsed: \_\_\_\_\_  
Total number of t units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_  
Longest t unit (words) = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_

**Advice #1:**

Time elapsed: \_\_\_\_\_  
Number of:  
    imperatives = \_\_\_\_\_  
    on topic = \_\_\_\_\_  
    off topic = \_\_\_\_\_  
Number of t-units = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_

**Communication Scale:** Means = \_\_\_\_\_

**Norman Rockwell #2:**

Time elapsed: \_\_\_\_\_  
Total number of t units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_  
Longest t unit (words) = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_

**Advice #2:**

Time elapsed: \_\_\_\_\_  
Number of:  
    imperatives = \_\_\_\_\_  
    on topic = \_\_\_\_\_  
    off topic = \_\_\_\_\_  
Number of t-units = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_

**Communication Scale:** Means = \_\_\_\_\_

## SESSION 2

### **Norman Rockwell #3:**

Time elapsed: \_\_\_\_\_  
Total number of t units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_  
Longest t unit (words) = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_

### **Advice #3:**

Time elapsed: \_\_\_\_\_  
Number of:  
    imperatives = \_\_\_\_\_  
    on topic = \_\_\_\_\_  
    off topic = \_\_\_\_\_  
Number of t-units = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_

**Communication Scale:** Means = \_\_\_\_\_

### **Norman Rockwell #4:**

Time elapsed: \_\_\_\_\_  
Total number of t units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_  
Longest t unit (words) = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_

### **Advice #4:**

Time elapsed: \_\_\_\_\_  
Number of:  
    imperatives = \_\_\_\_\_  
    on topic = \_\_\_\_\_  
    off topic = \_\_\_\_\_  
Number of t-units = \_\_\_\_\_  
Average length of t-units = \_\_\_\_\_  
Number of prompts = \_\_\_\_\_

**Communication Scale:** Means = \_\_\_\_\_

## APPENDIX H

### PROTOCOL RELIABILITY FORM

Did the...	Yes	No
1. Researcher (R) administer communication scale		
2. R present NR picture for 30 seconds. <b>Actual time = _____ secs</b>		
3. R probe with no other comments*		
4. R ask advice question for 2 minutes or less. <b>Actual time = _____ min</b>		
5. R probe with no other comments		
6. Intervention lasts 10 min. or less. <b>Type of intervention = _____</b> <b>Actual time = _____ min</b>		
7. R probe with no other comments		
8. R administer the communication scale		
9. R present NR picture for 30 seconds? <b>Actual time = _____ secs</b>		
10. R probe with no other comments?		
11. R ask advice question for 2 minutes or less. <b>Actual time = _____ min</b>		
12. R probe with no other comments		

## REFERENCES

- Albert, M., Sparks, R. & Helm, N. (1973). Melodic intonation therapy for aphasia. *Archives of Neurology*, 29, 130-131.
- Boucher, V., Garcia, L. T., Fleurant, J., & Paradis, J. (2001). Variable efficacy of rhythm and tone in melody-based interventions: Implications for the assumption of a right-hemisphere facilitation in non-fluent aphasia. *Aphasiology*, 15(2), 131-149.
- Brotons, M., & Koger, S., (2000). The impact of music therapy on language functioning in dementia. *Journal of Music Therapy*, 37(3), 183-195.
- Brotons, M., Koger, S., & Pickett-Cooper, P. (1997). Music and dementia – Review of literature. *Journal of Music Therapy*, 34, 204-245.
- Buday, E. M., (1995). The effects of signed and spoken words taught with music on sign and speech imitation with children with autism. *Journal of Music Therapy*, 32, 189-202.
- Carruth, E. K. (1997). The effects of singing and the spaced retrieval technique on improving face-name recognition in nursing home residents with memory loss. *Journal of Music Therapy*, 34, 165-186.
- Chapey, R., & Hallowell, B. (2001). Introduction to language intervention strategies in adult aphasia. In R. Chapey (Ed.), *Language Intervention Strategies in Aphasia and Related Neurogenic Communication Disorders* (pp. 3-17). Philadelphia, PA: Lippincott Williams & Wilkins.
- Clair, A. A. (1996). *Therapeutic uses of music with older adults*. Baltimore: Health Professions Press.
- Clair, A. A., & Ebberts, A. G. (1997). The effects of music therapy on interactions between family caregivers and their care receivers with late stage dementia. *Journal of Music Therapy*, 34(3), 148-164.
- Clark, S. D. (1993). Rehabilitation in palliative care: Speech therapy. In D. Doyle, G. W. C. Hanks, and N. Macdonald (Eds.), *Oxford Textbook of Palliative Medicine* (pp. 549-555). Oxford, England: Oxford University Press.
- Cohen, N. S. (1994). Speech and song: Implications for therapy. *Music Therapy Perspectives*, 12, 8-12.
- Cohen, N. S., & Ford, J. (1995). The effect of musical cues on the nonpurposive speech of persons with aphasia. *Journal of Music Therapy* 32(1), 48-57.

- Cohen, N. S., & Masse, R. (1993). The applications of singing and rhythmic instructions as a therapeutic intervention for persons with neurogenic communication disorders. *Journal of Music Therapy, 30*(2), 81-89.
- Curtis, S. L. (1986). The effect of music on pain relief and relaxation of the terminally ill. *Journal of Music Therapy, 23*, 10-24.
- Darrow, A., & Starmer, G. J. (1986). The effect of vocal training on the intonation and rate of hearing impaired children's speech: A pilot study. *Journal of Music Therapy, 23*, 194-201.
- Davis, W. B., Gfeller, K. E., & Thaut, M. H. (1999). *An introduction to music therapy: Theory and Practice* (2<sup>nd</sup> ed.). Boston: McGraw-Hill.
- Detmar, S. B., Aaronson, N. K., Wever, L., & Schornagel, J. H. (2000). How are you feeling? Who wants to know? Patients' and Oncologists' preferences for discussing health-related quality-of-life issues. *Journal of Clinical Oncology, 18*(18), 3295 – 3301.
- Dijkstra, K., Bourgeois, M., Youmans, G., & Hancock, A. (2006). Implications of an advice giving and teacher role on language production in adults with dementia. *The Gerontologist, 46*, 357-366.
- Fried-Oken, M., Fox, L., Rau, M., Tullman, J., Baker, G., Hindal, M., Wile, N., Lou, J.S. (2006). Purposes of AAC device use for persons with ALS as reported by caregivers. *Augmentative and Alternative Communication, 22*(3), 209-221.
- Haight, B. K., Bachman, D. L., Hendrix, S., Wagner, M T., Meeks, A., & Johnson, J. (2003). Life Review: Treating the dyadic family unit with dementia. *Clinical Psychology and Psychotherapy, 10*, 165-174.
- Haneishi, E. (2001). Effects of a music therapy voice protocol on speech intelligibility, vocal acoustic measures, and mood of individuals with Parkinson's disease. *Journal of Music Therapy, 38*(4), 273-290.
- Helm, N. A. (1978, February). *Criteria for selecting aphasic patients for melodic intonation therapy*. Paper presented at the meeting of the American Academy for the Advancement of Science, Washington, DC.
- Hilliard, R. E. (2003). The effects of music therapy on the quality and length of life of people diagnosed with terminal cancer. *Journal of Music Therapy, 40*(2), 113-137.
- Hunt, K. W. (1965). *Grammatical structures written at three grade levels*. Champaign, IL: National Council of Teachers of English.

- Keith, R., & Aronson, A. (1975). Singing as a therapy for apraxia of speech and aphasia: Report of a case. *Brain and Language*, 2, 483–488.
- Kerr, S. E., (2004). *The effect of music on non-responsive patients in a hospice setting*. Unpublished master's thesis, Florida State University, Tallahassee, FL.
- Kertesz, A. (1982). *Western Aphasia Battery*. San Antonio, TX: Psychological Corporation.
- King, J. & Lasker, J. P. (2005, November). *Communication topics and partners at end of life*. Presentation at the American Speech-Language-Hearing Association Conference, San Diego, CA.
- Krout, R. E. (2000). Hospice and palliative music therapy: A continuum of creative caring. In *Effectiveness of Music Therapy Procedures: Documentation of Research and Clinical Practice* (3<sup>rd</sup> ed., pp. 323-411). Silver Spring, MD: The American Music Therapy Association, Inc.
- Krout, R. E. (2001). The effects of single-session music therapy interventions on the observed and self-reported levels of pain control, physical comfort, and relaxation of hospice patients. *American Journal of Hospice and Palliative Care*, 18(6), 383-390.
- Kubler-Ross, E. (1969). *On death and dying*. New York: Collier Books – Macmillan.
- Kubler-Ross, E. (1974). *Questions and answers on death and dying*. New York: Macmillan.
- Lasker, J., Hux, K., Garrett, K. L., Moncrief, E. M., & Eischied, T. J. (1997) Variations on the Written Choice communication strategy for individuals with severe aphasia. *Augmentative and Alternative Communication*, 13, 108-116.
- Llewelyn, S., & Fielding, G. (1983). Am I dying nurse? Care of the terminally ill patient. *Nursing Mirror*, 156(16), 30-31.
- Menn, L. Ramsberger, G. & Helm-Estabrooks, N. (1994). A linguistic communication measure for aphasic narratives. *Aphasiology*, 8(4), 343-359.
- Mauk, J. (2003). Communication at the end of life. In W. B. Forman, J. A. Kitzes, R. P. Anderson, & K. K. Sheehan (Eds.), *Hospice and Palliative Care: Concepts and Practice* (2<sup>nd</sup> ed., pp. 67-85). Sundbury, MA: Jones and Bartlett Publishers.
- Mastel-Smith, B., Binder, B., Malecha, A., Hersch, G., Symes, L., McFarlane, J. (2006). Testing therapeutic life review offered by home care workers to decrease depression among home-dwelling older women. *Issues in Mental Health Nursing*, 27, 1037-1049.

- McCroskey, J. C. (1992). Reliability and validity of the willingness to communicate scale. *Communication Quarterly*, 40(1), 16-25.
- McMillan, S. C., & Weitzner, M. (1998). Quality of life in cancer patients. *Cancer Practice*, 6(5), 282-288.
- Naeser, M., & Helm-Estabrooks, N. (1985). CT scan lesion localization and response to Melodic Intonation Therapy with nonfluent aphasia cases. *Cortex*, 21, 203-223.
- Nussbaum, J. F., Pecchioni, L. L., Robinson, J. D., & Thompson, T. L. (2000). *Communication and Aging* (2<sup>nd</sup> ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- O'Callaghan, C. C. (1996). Lyrical themes in songs written by palliative care patients. *Journal of Music Therapy*, 33(2), 74-92.
- Radocy, R. E., & Boyle, J. D. (1979). *Psychological foundations of musical behavior*. Springfield, IL: Charles C. Thomas.
- Redinbaugh, E. M., (1988). The use of music therapy in developing a communication system in a withdrawn depressed older adult resident: A case study. *Music Therapy Perspectives*, 5 82-85.
- Sparks, R. W. (2001). Melodic Intonation Therapy. In R. Chapey (Ed.), *Language Intervention Strategies in Aphasia and Related Neurogenic Communication Disorders* (pp. 703-717). Philadelphia, PA: Lippincott Williams & Wilkins.
- Sparks, R. W., Helm, N., & Albert, M. (1974). Aphasia rehabilitation resulting from Melodic Intonation Therapy. *Cortex*, 10, 303-316.
- Stock, G. (1985). *The book of questions*. New York, NY: Workman Publishing Company, Inc.
- Straum, M. J. (1987). Music notation to improve the speech prosody of hearing impaired children. *Journal of Music Therapy*, 24, 146-59.
- West, T. M. (1994). Psychological issues in hospice music therapy. *Music Therapy Perspectives*, 12, 117-124.
- Wist, E. (1993). Teaching communication with cancer patients and terminally ill patients to medical students. *Journal of Cancer Education*, 8(2), 119-122.
- Wlodarczyk, N. M. (2003). *The effect of music therapy on the spirituality of persons in an in-patient hospice unit as measured by self-report*. Unpublished master's thesis, Florida State University, Tallahassee, FL.

Zoller, M. B. (1991). Use of music activities in speech-language therapy. *Language, Speech, and Hearing Services in Schools, 22*, 272-276.

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Name: Jessica Lee Brown

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