Complementary therapies in terminal care

Pain, music creativity and music therapy in palliative care

Clare C. O'Callaghan, MMus, BSW, RMT

Abstract

An analysis of the music therapy literature yields numerous reports to support the role of music in the alleviation of pain in palliative care. Four theoretical perspectives that support why many patients report reduced pain sensation after music therapy include: the psychological relationship between music and pain; the psychophysiological theory; spinal mechanisms involved in pain modulation; and the role of endorphins. Considerations significant to the use of music in pain relief include how music, used inappropriately, can aggravate pain sensation. Case studies, which include the use of creative music therapy techniques, point to the efficacy of music therapy in alleviating the pain experiences of both palliative care patients and their significant others.

Clare C. O'Callaghan, MMus, BSW, RMT, [Master of Music, Bachelor of Social Work, Registered Music Therapist], Lecturer in Music Therapy, University of Melbourne, Sessional Music Therapist, Oncology, Hematology and Palliative Care, Austin and Repatriation Medical Center, Parkville, Australia.

Aspects of Pain

Pain is: "An unpleasant sensory or emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[1] Pain is a subjective experience. The intensity of noxious stimulation such as cancer, medical treatments, or trauma does not have a one to one relationship with the intensity of perceived pain.[2] One's pain sensation is a response to the combined effects of physical noxious stimuli and the meaning of such events. Some people may experience pain without any known physical precursor; their pain may be a response to psychosocial upheaval. Whatever the origin, people's reports of pain are real and effective treatment must address both the physical and psychosocial causes.

An analysis of the music therapy literature yields numerous reports to support the role of music in the alleviation of pain in palliative care.

"Palliative care focuses on those last years or months of life when death is foreseeable."[3] In palliative care, music therapy offers non-intrusive opportunities for people to connect with and express their feelings at their own chosen pace. It fosters supportive interactions between the patients and their loved ones and enables patients to maintain some degree of physical-well being.[4] Music therapy also offers increased opportunities to communicate with brain impaired palliative care patients.[5] This paper outlines how music therapy may alleviate the pain experience of palliative care patients and those close to them, and offers considerations for the effective use of music by all palliative caregivers. Creative music therapy techniques and their outcomes are offered as evidence to support the role of music therapy in alleviating the pain experiences of these people.

There is always a 'suffering element' within one's cancer pain experience.[6] Suffering is associated with the uncertainty surrounding the chronic pain experience. It tends to not be associated with acute pain events such as childbirth or toothache. The components of suffering experienced by those with chronic pain can include: nociception (tissue damage); mood changes (many people will be more depressed and anxious); spiritual issues; financial concerns; social dislocation (*e.g.*, role changes); increased hospitalizations; lack of communication with caregivers; social isolation; losses (*e.g.*, vocational roles, family held roles and recreational abilities); and fears (*e.g.*, fear of death, how the family system will cope and that the pain will never abate).

Saunders[7] coined the term "total pain" to reflect pain's physical and psychosocial origins. Music therapists working in palliative care aim to raise the patients' pain thresholds and to alleviate the distress of both patients and their loved ones. They address pain perception arising from the patients' total pain experiences and the suffering of both patients and those close to them.

Music therapy and pain control

A major contributor to the pain and music therapy palliative care discourse is Bailey,[8] who more recently has written as Magill-Levreault.[9] She offers evidence from a survey[8] and music therapy case studies to argue that "music may alter components of the total pain experience and thus diminish the perception of pain."[9] She writes: "Music can engage, activate and alter affective, cognitive and sensory processes through distraction, alteration of mood, improved sense of control, the use of prior skills and relaxation.... The diverse qualities of music potentiate its effectiveness as a medium to be used to soothe pain and ease suffering."[9] In her review of the responses of 465 cancer patients who received music therapy, Bailey[8] said that patients generally reported a reduction in pain, improvement in mood and improvement in communication.

...music can sometimes be used to reduce pain intensity by being offered as a distraction, to reduce anxiety, to aid in relaxation, or as a vehicle for supportive psychotherapy.

Further evidence to support palliative music therapy's role in pain reduction is offered by Curtis.[10] A graphical analysis of 17 terminally ill patients' perceived pain relief, physical comfort, relaxation and contentment scores after their listening to recorded music pointed to the effectiveness of music.[10] Magill-Levreault,[9] Mount and Munro,[11] Mandel,[12] and Munro,[13] presented case-studies where patients showed evidence of reduced pain and heightened relaxation when listening to taped music. Lane[14] also stated that cancer patients have reported that listening to their favorite music can be invaluable when they are undergoing painful procedures or invasive tests.

Martin[15] described numerous techniques that may be used to aid in the pain management and relaxation of palliative care patients These included the use of music and autogenic and progressive relaxation techniques; the use of imagery and instrumental music (live or taped); and the use of musical improvisation by the therapist to describe an image reported by the patient. Guided imagery and music techniques have also been used to promote pain relief and relaxation in cancer patients by Wylie and Blom.[16]

Theoretical perspectives: Why music reduces pain sensation

At this stage music therapists can only hypothesize why so many palliative care patients report or display reduced pain symptoms when experiencing music therapy. Four theoretical (but not exclusive) perspectives that support why patients report reduced pain sensation after music involvement include:

A. Psychological Relationship between Music and Pain.[2]

Cortical processes influence the intensity and quality of the pain experienced through psychological variables which include: the memories of previous experiences; one's understanding of the origin of the pain and its consequences; cultural factors, the presence of competing stimuli (distractions); one's level of anxiety; suggestion (*e.g.*, hypnosis, the placebo effect); personality variables (of both the person with the pain and the professional caring for the pain); and expectation.[2] Therefore, music can sometimes be used to reduce pain intensity by being offered as a distraction, to reduce anxiety, to aid in relaxation, or as a vehicle for supportive psychotherapy.

B. Cognitive Coping Strategies[17]

Fernandez and Turk[17] support the concept that competing stimuli (distraction) reduce pain perception. They propose that one's capacity for attention is finite when exposed to competing stimuli. One must select stimuli to attend to and filter out or exclude the other information. Distraction through cognitive coping strategies may impinge on the amount of attention available for the processing of painful stimuli, thus reducing perceived pain. In their meta-analysis of the utility of cognitive coping strategies for reducing pain perception they found that imagery strategies were the most effective, including "imagining oneself sitting in comfort and listening to music." The possibility of listening to music to promote imagery and its effects on pain therefore warrants further investigation.

Some patients find music unhelpful, indicating increased pain after music listening.

C. Spinal mechanisms involved in the modulation of pain

The Gate Control Theory[2] suggests that the transmission of potentially painful impulses could be modulated by a "cellular gating mechanism" found in the spinal cord. When the gate is open, pain impulses flow through; when the gate is closed, they are impeded or cease. Research stimulated by this theory has led to an appreciation of the complex nature of the central transmission of pain impulses.

It is now known that the regulation of nerve impulses involved in pain perception through the spinal cord involves many peripheral, local spinal cord and descending mechanisms. The passage of pain signals via the primary afferent pathway is modulated in the dorsal horn of the spinal cord by neurotransmitters released from local interneurons and descending brain-stem spinal tracts. The activation of the descending inhibitory brain-stem spinal tracts result in the release of specific neurotransmitters at the local spinal cord level which reduce or impede the central transmission of pain impulses. Drugs applied at the local spinal cord level which are agonists for the neurotransmitters have similar effects.[18] It is possible that music could stimulate brain stem centers either directly via the auditory pathway or by indirect cortical mechanisms which include the psychological/cognitive processes described earlier. This could lead to the activation of descending inhibitory pathways, thus reducing pain transmission.

D. Role of Endorphins, some of which are natural opiates.

A study by Goldstein[19] supports the possibility that listening to one's favorite music causes endorphins to be released into the bloodstream. Some of the people who experience "thrills" (*i.e.*, little shudders) in response to their favorite music experienced less thrills when listening to their favorite music after given a dose of the opiate antagonist, naloxone. Opiates act on receptors that exist throughout the body, and are most effective in reducing pain resulting from noxious stimuli.

Promoting the effective use of music

Some patients find music unhelpful, indicating increased pain after music listening. To minimize the possibility of music aggravating pain, music must be sensitively offered by either music therapists or other palliative care staff who use music. Aspects pertinent to the effective use of music in the promotion of pain reduction and relaxation follow.

Patient choice is vital wherever possible

Patients should be invited to choose the music that they wish to listen to. Furthermore, caregivers should insure that others (including both staff and family members) do not project what they think the patient should be listening to. Statton and Zalinowski[20] found that no particular type of music was more helpful than any other in relaxation training. Some people have relaxed and shown signs of reduced pain when listening to fast, syncopated dance music.

Some patients prefer to relax to well known music while others prefer to listen to works without any associations for them.

Some years ago a 60-year-old patient with lung cancer requested any music of my choice to help her relax. I did not try to seek out her preferences and played what another patient that she reminded me of found

Table 1. Examples of factors which may conceal palliative care patients' true feelings about music involvement

Cause: illnesses and drugs	Effects
Illnesses (examples)	
Parkinson's disease	monotonous slurred speech, expressionless face
Motor Neuron disease	bulbar palsy altering speech and facial expression (face may appear "sad" or "smiling" depending upon how muscles are affected)
Dementia	poverty of thought and movement leading to lack of verbal and non-verbal communication
Brain tumors	all of the above are possible depending upon the site of the lesion
Drugs	
Sedatives (*e.g.*, valium)	drowsy, impaired cognition
Tranquilizers (*e.g.*, melleril)	tranquil appearance

helpful, a recording by Richard Clayderman. On playing the tape the patient became agitated, told me to take it off and asked for some dance music. Listening to a relatively fast City Slicker's tape of 1940s' dance music prompted her to rest back in her bed, close her eyes, and display reduced facial tension and slower, more regular breathing.

Familiar versus nonfamiliar music preferences need assessment

Some patients prefer to relax to well known music while others prefer to listen to works without any associations for them. Some wish to only listen to a song sung by a specific vocalist. When aiming to reduce patients' pain or promote their relaxation, music therapists sometimes improvise live music for, or with, patients. The musical media used though should be first considered by the patient. I unwittingly played a base xylophone to one patient who, on the improvisation's completion, said: "That reminded me of the bombs being dropped during the second world war when I was living in London."

Relaxation tapes need to be trialed

When offering relaxation tapes to patients one should check if they like them before leaving them on, particularly if the patient is unable to turn them off. What one finds helpful another finds uncomfortable, and possibly painful to listen to. Variables affecting patients' preferences include whether the tape is purely instrumental or includes guided (verbal) techniques, the nature of the guided techniques (*e.g.*, visual or physical), the gender of the guide, the accent and voice quality of the guide, whether it is an electronic or acoustic recording, and length.

Volume preferences need assessment

It is important that patients have control over the volume. Quadriplegic or very weak patients need particular attention. One anarthric lady with advanced motor neuron disease who had been listening to taped music for months asked me via an ETRAN board (a perspex board with the alphabet; the patient's eyes stare at the letters and colors on the board to communicate) to remove her borrowed tapes and recorder. Someone had put on her tape and head phones but did not check out if the volume was OK. She felt that it was intended.

Watch aggressive uses

Staff sometimes use music on wards to help them get through their shifts which can be a good thing, but radios played loudly on stations that patients dislike, so that the staff doesn't have to communicate with them, is inexcusable.

Considerations if patients can't choose

Sometimes music is played on wards in the vicinity of patients unable to state their preferences. Whilst music may be associated with reduced muscular tension and regular, slower breathing patterns in some of these patients, the agitated non-verbal body language of others will indicate that the music is inap-

propriate and should be removed. Whenever music is played in the vicinity of such patients their physical reactions must be monitored.

Watch for adverse effects

These include:

Lesions in the right temporal lobe (in left hemispheric dominant patients). These occasionally render music listening painful when it was once enjoyable. Patients with cerebral metastases or lesions from ischemic attacks in this area have reported that while they once liked listening to music it now sounded like a blur and was disturbing to listen to.

...music-based techniques [are used] to address the pain experience of palliative care patients...

Catastrophic reactions. These can be triggered in people who have dementia when particular music is played. A catastrophic reaction is one where patients either withdraw and become depressed, or show signs of anxiety or distress when faced with a task that they are unable to accomplish.[21] One patient with both cancer and dementia reacted with extreme distress on the two occasions that I played "Silver Threads Amongst the Gold." Such behavior was not evident on any other occasion during her hospitalization. In this instance, attempting to address the issues surrounding her reaction led to further distress and so the appropriate action was to distract her onto another song which she also enjoyed.

Musicogenic epilepsy. This is a condition in which music directly triggers an epileptic seizure.[22] Although this is rare it should be considered as a possibility if a client has a seizure when listening to music.

Offer music and relaxation or pain distraction techniques congruent with attention spans and energy levels

Lengthy guided imagery and music or progressive muscular relaxation followed by music and imagery may be helpful for patients in the earlier stages of their disease but, in my experience, techniques which require considerable concentration are seldom appropriate for people in the final stages. Patients with end stage illnesses sometimes benefit from short imagery and relaxation sessions of about five minutes.

Offer music when the patients present as disinterested if their expressions are "organically" affected

Some patients either have an illness or require medications that affect their non-verbal and melodic intonation expressions. Such people may respond to a music activity or music therapy technique as if they are bored, disinterested, distressed or even delighted, when they feel completely different. It is important to check their feelings and not assume what music can or can't offer them. Table 1 illustrates examples of factors which may conceal a patient's inner feelings about music involvement.

Clinical examples: Music therapy alleviating pain sensation

As already mentioned, music therapists use a variety of music-based techniques to address the pain experience of palliative care patients, and the suffering of their families. After assessing the "patient-in-situation" configurations the music therapists tailor their clinical approaches, offering the techniques that they think would be most useful. I think that this is the main feature that distinguishes music

Some patients either have an illness or require medications that affect their non-verbal and melodic intonation expressions.

therapists from other caregivers who use music in the palliative care context. Other caregivers tend to have a reduced range of music based techniques which are perhaps used less discriminatingly. The following case studies include some of the techniques that music therapists use to alleviate pain sensation arising from physical and psychosocial aspects (*NB*. All names have been changed):

The use of taped music as "audioanalgesia"

Anita was a 58-year-old Greek lady admitted into a hospice in extreme pain, groaning and rigid all over. She did not have any family and only one friend known to the hospital. She was referred to me to see if I could assist in her pain control. I played Anita a tape of Nana Mouskouri singing tranquil Greek songs and she immediately relaxed, stopped groaning, smiled, and sang along. Taped Greek music was played for the next two weeks, until

just before her death, to aid in reducing her pain symptoms. It is possible that the music alleviated Anita's pain because of a pleasant prior association being evoked, the distraction, and/or because it aided in anxiety reduction.

The use of live music and supportive counseling to "resolve" issues aggravating pain sensation

Ron was a 73-year-old man with lung cancer who was still able to walk around quite freely and often enjoyed listening to live music. One day he was uncharacteristically lying in bed, saying that he had a headache and asked me to "just play anything." After I played "Have You Ever Been Lonely" he asked if I could play "This Love of Mine," which I did, on an electric keyboard. He then asked for this song twice more. Ron said that he felt particularly lonely that day and that he was missing his wife who had died a few years earlier. For those unfamiliar with the words the chorus includes the following: "This love of mine goes on and on, though life is empty since you have gone, You're always on my mind, though out of sight, It's lonesome through the day and oh the night,.... What's to become of this, this love of mine?"

Ron said that his sister had been to visit him that morning and that she had encouraged him to "cheer up" and be like their mother who had also died in the hospice some years earlier. We discussed the likelihood that the way Ron's sister needed to watch Ron dying mismatched the way that Ron needed to deal with it. I then played a song called "It's Alright to Cry." Ron described his sadness about his situation and said that he did cry, but only privately. We also discussed the possibility of Ron telling his sister that he needed to deal with his illness in his own way. At the end of the session Ron said that his head was feeling better and the following day he came to tell me that he had talked to his sister that morning about what we had discussed and said: "I think she got the message."

The origin of individuals' pain experiences are multifaceted, hence palliative care team members need to be able to draw upon a wide variety of pharmacological, physical, and psychosocial modalities for its effective treatment.

The use of song writing, imagery and improvisation to alleviate pain sensation.

Using modified grounded theory and content analysis research techniques O'Callaghan[23] analyzed the themes of 64 songs written by 39 palliative care patients in music therapy sessions. The themes that emerged in their songs were: messages; self-reflections; compliments; memories; reflections upon significant others, including pets; self-expression of adversity; imagery; and prayers. The imagery theme occurred in 17 per cent of the songs and included many references to nature and to patients' stories which were either fiction or reality based. The expression of these themes through song writing indicates that song writing can offer patients an opportunity to find some refuge from all that is going on for them and that such diversion may aid in symptom control.

In one song, a patient described her frustration with her carcinoid tumor, her fatigue related to her discomfort, and getting the "run around" at hospital. After my inquiry of where she would like to be she included in the song: "When all I want to do is be in a forest with birds and bees and comfort." I always improvised at the end of the song while the patient, having had her pain acknowledged, imagined herself being in a forest. She said that the only times she felt distracted from her pain was when she listened to this and the other live music that I played.

Towards the end of her life Jane, a 30-year-old patient who had multiple sclerosis, wrote a song which she simply described as being an image from her homeland. After Jane's death her mother said that she listened to the therapists' recording of the song over and over to help in her bereavement. She also said that she had told Jane the story portrayed in the lyrics when Jane was a young girl. It involved Jane's mother waiting for her husband to return during the war. The patient's brother also used it to cope with his bereavement by making a recording of the song in a recording studio.

Celebrating a relationship in live music and reminiscence sessions assists a widow's bereavement.

I have a sweater that is a memorial to a series of music therapy sessions conducted with a patient and his wife. Ned was 53, suffering ad-

vanced motor neuron disease and experiencing anarthria and quadriplegia. He and his wife had spent many years going to numerous old time dances and eagerly awaited their private weekly music therapy sessions. In our sessions, which continued for about 12 months until his death, they chose songs and reminisced about their life together. Ned communicated with a light on a hat that he wore, projecting the light onto an alphabet and words written on big cardboard placards hung on the wall in front of him. A few months after his death Ned's wife asked me to send her a copy of his favorite song, "Three Coins in the Fountain." About eight months later she presented me with a jumper which she had designed and knitted. On the front she had sewn the first two bars of "Three Coins in the Fountain" and on the back was the fountain, some coins and fish. A keyboard was knitted in under the opening bars of "Three Coins in the Fountain." On one sleeve were the marks "ZA/", some of the last letters that Ned wrote, which were a request for the song (his nickname for it was "three zacs in the fish pond"). On the other sleeve was a picture of a house with a blue moon and the night sky above. "Blue Moon" was another favored song. Making this sweater was obviously a very important part of Ned's wife's griefwork, as she came to terms with the suffering related to her husband's death.

Conclusion

The origin of individuals' pain experiences are multifaceted, hence palliative care team members need to be able to draw upon a wide variety of pharmacological, physical, and psychosocial modalities for its effective treatment. The case studies presented illustrate some of the creative music therapy techniques associated with the reduction of physical pain and emotional suffering amongst palliative care patients and their families. Unfortunately, funding constraints often limit the extent to which music therapists can actively participate in palliative care teams. It is pleasing when other caregivers offer music but it must be sensitively presented, or else the patients' pain and discomfort levels may rise. After accepting a Performing Arts Award, Sue Nattrass remarked: "It's become very clear to me ... people really need ... food for the soul as much as they need food for the stomach."[24] Some of the most vulnerable members of our community, the severely disabled and dying, do not have access to the nourishment of aesthetic experiences. We have a human mandate to offer palliative care patients aesthetic, creative options, such as music therapy, to deal with their pain experiences arising from degenerative conditions.

References

1. International Association for the Study of Pain: Sub-committee on taxonomy, Pain Terms: a list with definitions and notes on usage. *Pain*, 1979;6:249-252.
2. Melzack, R: *The Puzzle of Pain*. Middlesex, Penguin, 1973.
3. Doyle D, (1984) cited in R Woodruff: *Palliative Medicine*. Melbourne, Asperula Pty Ltd., 1993.
4. O'Callaghan, C: The use of music therapists in palliative care. In P Hodder and A Turley (eds): *The creative option of palliative pare* (pp. 137-143). Melbourne, Melbourne Citymission, 1989.
5. O'Callaghan C: Communicating with brain-impaired palliative care patients through music therapy. *Journal of Palliative Care*, 1993;9(4):53-55.
6. Buchanan J, Redpath R, Haines I, Jackson K, Kaye A: *Management of pain in cancer*. Melbourne, Sigma Pharmaceuticals Pty Ltd., 1991.
7. Saunders C, (1967) cited in B Mount. Psychological and social aspects of cancer pain. In PD Wall, R Melzack (eds). *Textbook of Pain* (pp. 460-471). London: Churchill and Livingston, 1984.
8. Bailey L: The role of music therapy. *In Management of Cancer pain*. Syllabus of the postgraduate course, Memorial Sloan-Kettering Cancer Center, New York City, November, 1985.
9. Magill-Levreault L: Music therapy in pain and symptom management. *Journal of Palliative Care*, 1993;9(4):42-48.
10. Curtis S: The effect of music on pain relief and relaxation of the terminally ill. *Journal of Music Therapy*, 1986;23(1):10-14.
11. Munro S, Mount BM: Music therapy in palliative care. *Can Med Assoc J*, 1978;119:1029-1034.
12. Mandel SE: Music therapy in the hospice: "Musicalive." *Palliative Medicine*, 1991;5(2):155-160.
13. Munro, S: *Music Therapy in Palliative/Hospice Care*. St. Louis, MO: MMB Music In., 1984.
14. Lane D: Music therapy: a gift beyond measure. *Oncology Nursing Forum*, 1992;19(6):863-867.
15. Martin, JA: Music therapy in palliative care. In: JA Martin (ed): *The Next Step Forward: Music Therapy with the Terminally Ill* (pp. iii-viii). NY: Calvary Hospital, 1989.
16. Wylie ME, Blom RC: Guided music and imagery with hospice patients. *Music Therapy Perspectives*, 1986;3: 25-28.
17. Fernandez E & Turk DC: The utility of cognitive coping strategies for altering pain perception: a meta-analysis. *Pain*, 1989;38:123-135.
18. Yaksh T L: Neurologic mechanisms of pain. In MJ Cousins, PO Bridenbaugh (eds): *Neural Blockade in Clinical Anesthesia and Management of Pain*. Philadelphia, JB Lippincott Co., 1988.
19. Goldstein A: Thrills in response to music and other stimuli. *Physiol Psychol*, 1980;8(1):126-129.
20. Statton VN & Zalinowski AH: The effect of background music on verbal interaction in groups. *Journal of Music Therapy*, 1984;21(4):184-192.
21. Sainsbury, MJ: *Key to Psychiatry*. (3rd ed). French Forest: Australia and New Zealand Book Co. Pty. Ltd., 1980.
22. Erdonmez D: Musicogenic Epilepsy: The current state of research. Unpublished article, 1987.
23. O'Callaghan C: *Song Writing in Palliative Care*. MMus Thesis, University of Melbourne, 1994.
24. Nattrass S: *The Age* (newspaper), 10th April, 1995. p 24.