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Music therapy as a non-pharmacological anxiolytic for paediatric radiotherapy patients

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SUMMARY

Outpatient radiotherapy treatment in the paediatric cancer patient can be a traumatic and an anxiety-provoking experience for both the patient and the family. Music therapy has been widely reported to have psychosocial, educational and physical benefits for the paediatric cancer patient. Using individual case reports, this paper shows the successful use of music therapy as a non-pharmacological anxiolytic in the paediatric radiotherapy, outpatient waiting room setting, by providing the patient and the family with a means of communication, self-expression and creativity.

Key words: *anxiolytic; music therapy; paediatric; radiotherapy.*

INTRODUCTION

Radiotherapy is an integral part of treatment for many children and early adolescents with malignancies. Most children requiring radiotherapy have brain tumours, sarcomas, neuroblastoma or leukaemia. Their radiotherapy treatment is usually given as an outpatient. Peter MacCallum Cancer Centre (Peter Mac) in Victoria, largely an adult oncology centre, treats most of the Victorian and Tasmanian children needing radiotherapy. Attending for consultations and treatment in an initially unfamiliar and otherwise adult-oriented cancer centre can be stressful and distressing for the young patients and their families. The experience can be lonely, frightening, intimidating and anxiety provoking for both the child and their parents. Such experiences have been reported to lead to post-traumatic stress disorder.[1] However, both pharmacological and non-pharmalogical methods may reduce distress.[2–5]

Music therapy can be defined as 'the creative and professionally informed use of music in a therapeutic relationship with people identified as needing physical, psychosocial or spiritual help…enabling increased life satisfaction and quality'.[6] Music therapists are employed in inpatient paediatric cancer care globally. Psychosocial, educational and physical benefits have been widely reported in planned, structured sessions.[7–12] Furthermore, as there is a correlation between neural musical function and development[13–16] and improved intellectual ability,[17–20] encouraging young patients to play musical instruments may buffer potential cognitive deficits associated with the long-term effects of cranial radiation.

As randomized control trials (RCT) have limited ability to capture complex human relationship factors involved in therapeutic outcomes, case study reports are a valid way of substantiating the relevance of music therapy as an anxiolytic in paediatric radiation oncology.[21,22] Hence, this article uses real-case scenarios to show the successful use of music therapy as a non-pharmacological anxiolytic agent in the setting of outpatient radiotherapy treatment, thus improving the experiences of children undergoing treatment for life-threatening illnesses and their families.

METHODS

In April 2002 Peter Mac introduced music therapy one morning a week into the paediatric, outpatient radiotherapy waiting

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area as a strategy aimed at alleviating the paediatric patients' stress and boredom. Children being monitored by radiation oncologists, while undergoing 5 days a week of radiotherapy treatments for up to 6 weeks, were offered music therapy when waiting for medical consultations and radiotherapy treatments. Music therapy was also offered to those waiting for radiotherapy assessment consultations and reviews post-treatment.

Next to the waiting area, musical instruments were placed in a 5.5 m × 5 m space, among children's tables and chairs, play equipment (tent, stove, lego, dolls, trucks, drawing materials and a soccer table) and a low couch. The musical instruments included a keyboard synthesizer, autoharp (acoustic stringed instrument), omnichord (synthesized autoharp), groovebox (DJ simulator), chime bars, metalophone, guitar and non-tuned percussive instruments.

While waiting, patients and families were invited to 'play' with the musical instruments, or improvise, sing and compose musically inspired stories or songs with a music therapist. A lengthy open-ended music therapy session (up to 3 h) occurred with the therapist adapting the music therapy methods to meet the needs of those wishing to be involved. Patients and families moved in and out of the music therapy space as they attended 'weigh in', met doctors and nurses and received radiation. Sometimes the therapist worked with individual children, while parents either observed or met doctors privately. At other times she worked with groups of children, or with families, playing music or creating songs together.

During 26 weeks of sessions (late 2004/early 2005) 60 patients 14 years and younger attended a total of 128 consultations with the radiation oncologists. Thirty were new patients and the remainder was being reviewed while having treatment or follow-up appointments. A total of 85 music therapy sessions were experienced by 39 of these patients, with or without 63 of their family members and friends. Twenty-five patients had one session; four patients each had two, three or seven sessions and one patient each had five or eight sessions. Four patients had sessions for more than once a week (totalling 15 extra sessions). The average session length was 30 min. Twenty-one patients did not participate at all. Perceived reasons for non-participation included that they did not want to be involved, they did not need to wait or that the music therapist's attention with other children precluded her inviting their involvement.

RESULTS

A range of benefits were perceived by the authors. Some patients and families experienced temporary respite from the stressful waiting context, through explorative musical sound creation, whereas others showed ongoing physical and psychosocial improvements. Communication between patients and their families was facilitated and happy moments were shared and remembered. Fears were expressed metaphorically by creating stories about animals getting in and out of scary situations, with improvised musical accompaniments. Siblings were also able to 'play' and indirectly express their concerns in song writing. No adverse experiences resulting from music therapy were evident to the treatment team, nor were any mentioned by those involved in the therapy. Three case scenarios will illustrate in more detail how music therapy helped the children through treatment.

Jack

Nine-year-old Jack had received keyboard lessons before being diagnosed with a nasopharyngeal rhabdomyosarcoma. Treatment involved 6 weeks of radiotherapy treatments after chemotherapy. During treatment he experienced nausea, required percutaneous endoscopic gastrostomy feeding and had multiple hospital admissions for infections. Following 2 weeks of sharing precomposed music and keyboard improvisations with the music therapist, Jack, too unwell to attend school, brought excerpts he had composed at home. Through the Internet he taught himself to professionally transcribe his composed songs onto sheet music. His father reported that Jack looked forward to coming to Peter Mac 'but not for the radiotherapy'. Some months later, Jack presented the music therapist with piano sheet music of his first composition called 'Therapy' because 'Without music therapy, I never would have known I could compose music' (Fig. 1). Eighteen months later, Jack was well and had composed eight more 'works' for up to three instruments.

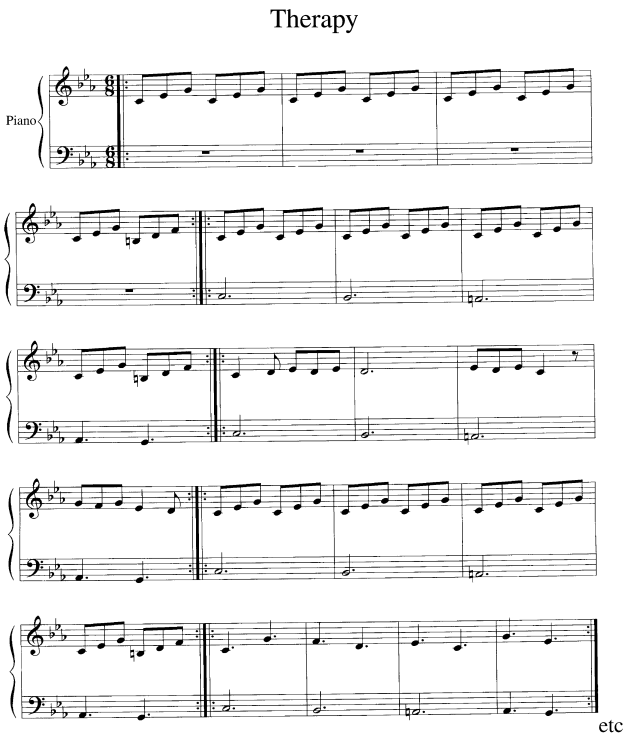

Fig. 1. Introduction to 'Therapy', for piano, composed by Jack.

Mark

Mark was 13 years old, with a pineal germinoma, Parinaud's syndrome and hydrocephalus. He required 6 weeks of radiotherapy. Mark was initially very anxious (tremulous and indigestion) but, after being shown simple keyboard improvisation techniques, his 'legs stopped shaking'. 'I have found what I have been looking for', he repeatedly said. Mark borrowed a keyboard and had six sessions exploring improvisation and song writing. He often closed his eyes, allowing the music to suggest imagery-containing memories or imagined experiences while playing. 'Did you see me smiling as I was playing?' Mark often asked. His mother was invited to provide some lyrics. She described her love and hopes for Mark, a request for an altered behaviour and her availability for him. Mark composed the music for these lyrics and then wrote his own song, with synthesized rap instrumentation (Table 1).

Mark was proud of his improvisations and said that when he felt the 'butterfly sensation' in his stomach, improvisation helped him to feel better. His shaking and antacid and sleeping medications were reduced. Mark and his mother were more open about their disagreement and he urged her to provide drum machine support for his song. As Mark's anxiety reduced the interaction with radiotherapy staff improved and preparation time required before each radiotherapy treatment was also reduced.

Debbie

Debbie was 11 years old when diagnosed with an optic tract glioma. Initial chemotherapy elicited minor improvements before further visual deterioration, accompanied by headaches and nausea. She was referred for 6 weeks of radiotherapy and needed to stay in an unfamiliar accommodation with her parents and sister, far from school and friends throughout her treatment. In the first few weeks, Debbie's headaches were intense with minimal response to high-dose steroids and analgesics. Stress was considered to be exacerbating her symptoms. While in the waiting area Debbie examined sounds on the keyboard, but initially appeared shy and mainly observed her sister doing so. In week 3 Debbie was delighted when offered 'therapeutic keyboard lessons' and borrowed a hospital keyboard. The following morning her headaches began to improve. Whereas this may have been because of the radiation, it is suggested that Debbie's improved affective state and morale also helped to reduce her perception of pain. Over the next 3 weeks Debbie had eight keyboard lessons. Her family was ambivalently humoured by being awoken at 07:30 hours by her 'practice' and her requests to return to the piano while out sight seeing. Debbie continued to improve, becoming brighter, more extroverted and proud, shyly playing songs for staff including, 'Happy Birthday' (a surprise for her sister) and Christmas carols. Debbie's steroids could be reduced as also her analgesics. Debbie was still enjoying her playing 4 months later and her headaches remained under control.

Table 1. Mark's lyrics for a rap song composed during music therapy

Life Goes On
I'm gonna get out of this hospital
Get back to my normal life
I'm getting tired of radiation
Back my life with some elation
And I'm gonna be well
And my life will gel
Have nothing on my mind
And my mind will clear
And nothing I will fear
I will have a nice fresh start
Welcome to my life

DISCUSSION

Whereas many theories expound the therapeutic properties of music,[23–29] those by psychoanalyst, Donald Winnicott,[28] and philosopher, Laird Addis,[29] especially clarify how music therapy can help children dealing with life-threatening illnesses. Winnicott's theory of transitional phenomena illustrates how musical play can enable creative self-discoveries that can transduce into more adaptive ways of being in the world. As the therapist reflects back the client's music in their shared interaction (through a precomposed song, song writing or improvisatory process), the client can be metaphorically mirrored, musically and non-verbally, motivated to create further and to feel 'an expression of I AM, I am alive, I am myself'.[28]

Addis contended that the power of music is at least partially because of its ability to bring 'possible states of consciousness to the mind' that language cannot.[28] Whereas language and music can penetrate the awareness levels of consciousness that involve attention, only music can touch the 'non-attentive' awareness level of consciousness 'in which there is no attention'.[29] This, Addis argued, is because only the elements of music and consciousness share an ontological affinity (form and content). Music and consciousness require time to exist, whereas language requires both change and time to exist. As musical components can extend through one's entire stream of consciousness, music has the potential to validate one's whole self.

These theories suggest that the presence of a music therapist with a patient, whether in a closed room or open waiting area setting, has the potential to create a transitional space wherein the therapist and the music can provide a 'human musical mirror' and the music can touch one's entire stream of consciousness. The patient can be represented to and reflected back in a multisensorial manner, that is, musically, verbally, non-verbally and visually, expanding the potential for a therapeutic experience through: (i) creative reintegration; (ii) feeling one's authentic sense of self; and (iii) considering alternate ways of being, realistically and metaphorically: evident in the children's musical stories, lyrics and improvised themes.

The introduction of music therapy into a paediatric radiotherapy, outpatient waiting area can reduce anxiety and stress in a number of patients, as well as for family members and staff involved in their care. Treatment costs may also reduce. In two of the case studies there was a reduced need for pharmacological anxiolysis and, in one, reduced radiation preparation times. The 'value', however, of children's improved adjustment to adverse hospital experiences, through cathartic musical experiences, which can also increase self-esteem and joy, cannot always be fiscally determined.

Music therapy is a worthwhile anxiety-reducing technique in the paediatric radiotherapy waiting area and continues at Peter Mac. Invitational, open-ended sessions, wherein a variety of music therapy techniques are offered to young participants who are free to come and go, are an efficacious supportive method in cancer care waiting contexts.

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