



Keeping the balance – an overview of mind–body therapies in pediatric oncology

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Summary This overview aims to give a brief introduction for clinicians in the wide field of Mind–Body Therapies (MBTs), to summarize the current research status of MBTs in pediatric oncology and to mention challenges for future goals. Most used techniques (relaxation, hypnosis, yoga, massage, MBSR, eurythmy) will be described and efficacy will be discussed. MBTs are an enhancement of conventional medicine to motivate the patient to participate in his recovery. Most MBTs are of low risk and are accessible for patients and their families in nearly all stadium of cancer therapy. Positive results include increased self-confidence and a more optimistic view in coping with the illness. We encourage clinicians to be more aware of the promising field of MBTs and its use in pediatric oncology.

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Introduction

The treatment of children with cancer is one of the great medical success stories of the last half-century. In the field of pediatric oncology more than three-quarters of all children diagnosed with cancer will now be cured.¹ Nevertheless, the side effects like distress, fatigue or pain of the numerous and repeated painful medical procedures are

still prevalent.^{2,3} Families report that symptoms of anorexia, nausea, vomiting and pain are not adequately treated with conventional medicine.^{4,5} Side effects influence quality of life, months, years, even decades beyond treatment^{6,7} and also the family functioning decreases over the first year after diagnosis.⁸

CAM is defined as a group of diverse medical health care system practices and products that are not presently considered to be a part of conventional medicine. In general they tend to help and re-structure the recovery of health and quality of life in cancer patients promoting symptom reduction after invasive treatments.

Mind–Body Therapies (MBTs), as part of CAM, comprise various techniques based on body work and relaxation to enhance the mind's capacity to affect bodily function and symptoms promoting cure. Mind–Body interventions have a holistic approach towards health and care. These therapies include meditation, yoga, tai chi, deep-breathing

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exercises, guided imagery, hypnotherapy, relaxation techniques and expressive therapies such as music, art, dance and movement therapy.⁹ The National Institutes of Health (NIH) defines MBTs as practices “that focus on the interactions among the brain, mind, body, and behaviour, with the intention to use the mind to affect physical functioning and promote health”.⁹ Coming up in the early 1960, MBTs were inspired by research into stress physiology and psychology¹⁰ and the core concept of salutogenesis by Antonovsky.¹¹ MBTs are no alternatives to the conventional medicine but moreover an enlargement to focus on the individual needs of the patients and to motivate the patient to become an active part in his recovery.

In pediatric oncology MBTs have had a wide use range particularly among educated population^{15,16} in western countries.^{13,14} Results of previous work indicated that 31–84% of children used some form of CAM along with conventional anti-cancer therapy.¹⁶

In a survey of various complementary therapy modalities, MBTs were found to be the most used by cancer patients¹⁸ and have been especially recommended to reduce pain, nausea, fatigue, sleep disturbance and avoid side effects of pharmacological treatments regularly used for these symptoms.^{15,19,20}

General aims of MBTs are to contribute to symptom management during invasive treatments, avoid unspecific side effects in particular pain or fatigue and to improve quality of life of cancer patients. According to Post-White,⁷ MBTs are of low risk in comparison with herbal therapies which might interfere with medical treatments. The goals of MBTs are also consistent with those of the *Initiative for Pediatric Palliative Care*, a consortium of institutions and academic centres whose aim is to enhance the care delivered to children living with life threatening illness.²¹

Another important goal for the use of MBTs in pediatric cancer treatment is the application of MBTs for the parents. In a group survey²² of 125 families in pediatric oncology, all parents except one reported post traumatic stress symptoms and mean scores on the post-traumatic stress disorder reaction index. Interventions directed at parents should therefore be included as part of the treatment plan.²³

In the following section we will discuss most used MBTs that have been applied in children with cancer.

Relaxation techniques

Relaxation is a biological response that minimizes sympathetic nervous system activity which in turn decreases oxygen demand and slow heart rate.²⁴ Relaxation therapies are techniques designed to elicit a state of relative freedom from mental and physical tension. They have been used since the early 1900s with Jacobsen’s muscle relaxation technique.²⁵ The literature suggests that for cancer patients, symptom improvement occur as a result of eliminating physical tension, emotional stressors and aiding sleep.^{13,15} In a study comparing progressive muscle relaxation and massage, progressive muscle relaxation showed greater pain relief in adult patients.²⁶ In one pilot study Dahlquist and collaborators²⁷ reported a decrease in distress in children to which relaxation was practiced

after a painful procedure. In another study, Kaufman and collaborators¹⁷ reported a decrease in severity of nausea and vomiting, improved sleep, and increased oral intake in adolescents applying relaxation; no statistic is provided. One study describes the development of a parent educational booklet that promotes the use of distraction and relaxation techniques during invasive procedures with promising outcomes.²⁸ Many studies have investigated the use of relaxation in controlling pain in adults and children; however the results are not fully consistent.¹³ Summarizing, relaxation is a general goal of all Mind–Body approaches helping the patient to overcome pain, fatigue and eliminate tension through the reduction of sympathetic activity and brain alertness. Relaxation can be taught through a variety of methods in different populations of patients including those in pediatric oncology. Utilization of relaxation techniques by nurses at hospitals can be of great help in coping with pain, fatigue and eliminate tension in children.

Hypnosis

Clinical hypnosis can be defined as an altered state of consciousness, awareness and perception.²⁹ Hypnosis is a highly relaxed state in which the patients’ conscious and unconscious mind is open to therapeutic suggestion. The impact of hypnosis on pain reduction during painful procedures in pediatric oncology has been examined in several clinical trials.^{30–34} Hypnosis is proposed to be an appropriate medium for pain management in children because they tend to be more hypnotically responsive than adults.³⁴

Hypnotic relaxation is the most frequently cited form of non pharmacological interventions in pain control. In a panel from NIH,³⁵ Technology Assessment concluded that there was a conclusive evidence for the use of clinical hypnosis in alleviating chronic pain associated with cancer. It has also been employed for the relief of nausea and vomiting secondary to chemotherapy.²⁹ A first study in children exists from 1982 by Zeltzer and LeBaron³⁶ who examined the impact of hypnosis on pain and anxiety during bone marrow aspiration and lumbar puncture in 33 pediatric oncology patients. Authors reported a statistically significant and stronger reduction of pain after hypnosis than non-hypnotic techniques. Other studies^{30–32} also report a reduction in anticipatory anxiety and reduced pain during lumbar punctures after hypnosis. This demonstrates that hypnosis combined with a local anaesthetic in young patients is more effective than receiving local anaesthetic alone or supportive attention. A randomized study of the efficacy of hypnosis in children receiving chemotherapy found that the children had less anticipatory nausea and vomiting compared to controls.³⁷ Hypnosis was also shown to be associated with the relief of a variety of acute and chronic cancer pains and also painful interventions in children. Another study reported a significant improvement in anxiety and discomfort in 18 children after hypnosis during painful procedures in cancer treatment.³⁸ In general, hypnosis is considered the most successful from all MBTs used in pediatric oncology in reducing pain during procedures and pain management after treatments. Available data allows to conclude that hypnosis should be considered as a first choice of MBTs in pediatric oncology.

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