Supporting Australians with Cancer: A Critical Review of Complementary Therapies in Oncology

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Introduction
Complementary and alternative medicine has had an increasingly prominent role in health care, particularly in oncology. It has been defined as “diagnosis, treatment and/or prevention which complements mainstream medicine by contributing to a common whole by satisfying a demand not met by orthodoxy or by diversifying the conceptual frameworks of medicine”.

A distinction is often made between “alternative therapies” – those used instead of mainstream therapies – with potentially biologically active components, and “complementary therapies” used in addition to mainstream therapies in a largely supportive role.

In Australia, the prevalence of complementary and alternative medicine use has been measured at 52.1%1, increasing from 48.5% in the same population seven years earlier. Interestingly, the public paid nearly four times as much for alternative therapies than for pharmaceuticals. Increasing use and expenditure has also been demonstrated in the USA, with 42.1% of the population using at least one alternative therapy.

In Europe, use varies greatly between countries, with an overall prevalence of 20-50%6, but as few as 8.5% of the population visiting a complementary or alternative medicine practitioner in the UK.

The use of complementary and alternative medicine is particularly significant in patients who have cancer. A systematic review found that use ranged from 7-64%, with average use in adult cancer patients being 31.4%1. An Australian study found that 21.9% of cancer patients were using complementary and alternative therapies in terms of improvement in symptoms and quality of life is examined and evidence that relates to their impact on immune function and survival is also explored.

Method
This is not a systematic review of all available data. However, a thorough search of the MEDLINE, EMBASE, CANCERLIT, PsychINFO databases and the Cochrane Controlled Trials Register was conducted to identify relevant studies, with an emphasis on identifying randomised controlled trials (RCTs). In addition, identified papers were reviewed for further relevant citations. This review was limited to data published in the English language.

Acupuncture
Acupuncture originated from traditional Chinese medicine up to 2500 years ago. Traditionally, needle insertion, heat or pressure is applied to specific acupuncture points, to cause harmony following imbalances in “yin-yang” and “qi.” In modern times, various versions of acupuncture have developed globally, some of which utilise standardised points and do not have a metaphysical basis.

The analgesic and anti-emetic effects of acupuncture have been most adequately explored in patients with cancer. An RCT compared individualised auricular acupuncture with insertion at placebo acupuncture points and no acupuncture, in patients who had chronic neuropathic pain arising after treatment of cancer41. At 60 days, auricular acupuncture had a significantly lower visual analogue score for pain when compared to placebo and control groups. A comprehensive systematic review of acupuncture anti-emesis trials concluded that superior anti-emetic control was achieved in patients with cancer when acupuncture involving the P6 acupuncture point was performed. An RCT involving women with breast cancer, found that patients in the acupuncture group had a significantly lower number of emesis episodes and higher proportion of emesis-free days when compared with both the placebo and control groups42.

Other novel uses of acupuncture for symptom control in cancer patients have been reported, but are yet to be investigated adequately. A small, uncontrolled pilot study demonstrated significant improvements in breathlessness up to 90 minutes after acupuncture43. Improvements following acupuncture for patients with pharmacologically refractory vasomotor symptoms have been reported in two case series, a series of women with breast cancer44 and a series of men with prostatic carcinoma45. A single case report documents the successful use of acupuncture to treat unexplained sweating related to an inoperable lung cancer46.

No evidence of improvement in immune function or survival following treatment with acupuncture was found. One uncontrolled study of cancer patients evaluated T-cell and NK cell activity before and after a course of five electro-acupuncture treatments47. Given the increasing desire of cancer patients to use complementary and alternative therapies, as well as the failure of mainstream treatments to provide desired outcomes, it seems paramount that clinicians have a good understanding of the evidence available in this field. This critical review aims to provide an overview of the current evidence pertaining to a range of complementary therapies that are used in a supportive role in the treatment of cancer patients. Treatment modalities considered are: acupuncture, music therapy, massage and touch therapies, and psychological interventions. The efficacy of these complementary therapies in terms of improvement in symptoms and quality of life is examined and evidence that relates to their impact on immune function and survival is also explored.

Massage and Touch Therapies
Therapeutic massage is the “rhythmic and methodical stretching and compressing of the muscles and connective tissue through touch of the therapist’s hands”20. It may be used in conjunction with aromatherapy, which involves the perceived therapeutic use of plant essences21. Reflexology is a technique that involves the application of pressure to areas of the feet or hands in order to produce effects in other parts of the body22. Massage techniques are differentiated from healing or therapeutic touch, which are energy therapies involving use of the practitioner’s hands above and on the body, restoring harmony and balance to the energy system23. Reiki is a related form of spiritual healing which also involves the use of touch24.
An RCT comparing therapeutic massage with standard care in patients undergoing autologous bone marrow transplant found that the massage group had significantly decreased distress and nausea scores. A small pilot study, which randomised cancer patients in a hospice to massage or standard care, was unable to detect any differences in pain intensity, analgesic use and quality of life. Smaller quasi-experimental studies, which considered effects pre- and post-intervention, have also demonstrated improvements in pain and anxiety following therapeutic massage in patients with cancer.

In terms of other therapies, a randomised trial examining the use of aromatherapy combined with full body massage in patients attending a palliative care centre, detected significant improvements in anxiety, severity of physical symptoms and quality of life. Reflexology has been considered in cancer patients with metastatic disease, with an RCT demonstrating that pain scores were significantly reduced immediately after the intervention, although there was no significant difference 24 hours after intervention. A randomised crossover trial which aimed to compare therapeutic massage, healing touch

### Recommendations Supporting the Use of Psychological Therapies in Cancer Patients

(Adapted from Reference 42)

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<tr>
<th>Outcome Targeted By Psychological Intervention</th>
<th>Tentative Recommendations</th>
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| Anxiety | ■ Long-term benefits of structured or unstructured counselling  
■ Short-term benefits of self-practice |
| Depression | ■ Medium-term benefit of group therapy  
■ Long-term benefit of education and structured counselling. |
| General or Overall Effect | ■ Unstructured counselling  
■ Long-term benefits of education, counselling, cognitive behavioural therapy, communication skills training  
■ Medium-term benefit of group therapy  
■ Immediate benefits of interventions involving significant others, education and communication skills training. |
| Hostility | ■ None |
| Stress or Distress | ■ Non-therapist structured counselling  
■ Medium-term benefits of group therapy, cognitive behavioural therapy, communication skills training  
■ Self-practice not recommended for further investigation |
| General or Overall Functional Ability or Quality of Life | ■ Medium and long-term benefits of counselling and guided imagery |
| Coping or Control Skills | ■ Immediate benefits of group therapy |
| Vocational or Domestic Adjustment | ■ None |
| Interpersonal or Social Relationships | ■ Long-term benefits of counselling |
| Sexual or Marital Relationships | ■ Long-term benefits of therapist delivered, individual interventions involving education and counselling |
| Nausea | ■ Medium-term benefits of relaxation and guided imagery |
| Vomiting | ■ None |
| Pain | ■ None |
| Fatigue | ■ Medium-term benefits of group therapy and cognitive behavioural therapy |
| Overall Physical Symptoms | ■ None |
| Conditioned Nausea | ■ Self-practice and hypnosis  
■ All interventions in immediate period  
■ Medium-term benefits of guided imagery |
| Conditioned Vomiting | ■ Immediate benefit of self-practice and hypnosis; relaxation training, guided imagery, self-practice and hypnosis  
■ Medium-term benefits of relaxation and guided imagery |
| Survival | ■ None |
| Immune Outcomes | ■ Benefits of group psychiatric intervention in medium or long-term periods (to be treated with caution, based on one study) |
and caring presence with standard care, found that all intervention groups had significantly decreased total mood disturbance with therapeutic massage significantly improving anxiety and healing touch significantly improving fatigue. When compared with standard opioid management, in an RCT of advanced cancer patients, Reiki was demonstrated to significantly improve pain and psychological components of quality of life scores.

There is little evidence relating to massage therapies and effects on immune function or survival outcomes in patients with cancer. A crossover study of homosexual men, some of whom were HIV-positive, demonstrated a significant increase in natural killer cell cytotoxicity during the massage period. These findings may prove to be relevant to cancer patients.

Music Therapy

Music therapy involves the use of a variety of active and passive music-based experiences, which can be either live or recorded, in the context of a therapeutic relationship. In oncology inpatients, a randomised trial comparing live and tape-recorded music demonstrated statistically significant improvements in mood and physical comfort in patients treated with live music therapy. In an RCT of patients with a haematologic malignancy admitted for autologous stem cell transplantation, subjects receiving an individualised program of live music therapy had a significant total improvement in mood. Another RCT investigating live individualised music therapy in cancer patients entering a hospice program, found that quality of life was significantly higher in the music therapy group and that it increased over time, in spite of decreasing physical status.

A significant reduction in symptoms was recorded in the intervention group of an RCT exploring the effects of recorded music therapy on nausea and vomiting in patients receiving standard anti-emetic therapy whilst undergoing bone marrow transplantation in a comprehensive cancer centre. The effect of music therapy on pain has been explored in less rigorous studies. A small study with a crossover design could not detect a significant improvement in pain or analgesic use when music therapy was used. An uncontrolled study of hospice patients, comparing pain control before and after a single individualised session of music therapy, reported a significant improvement.

There is little evidence to suggest that music therapy improves immune function or survival. A small, uncontrolled pilot study of cancer patients found a significantly increased level of salivary IgA (both concentration and secretion) after live music therapy. The only study which commented on length of life after music therapy found no significant difference between the intervention and control groups.

Psychological Therapies

Although controversial, there is a suggested link between psychological factors and cancer progression, for example a large population-based cohort study of women with breast cancer found that high scores for depression and hopelessness were associated with increased risk of relapse or death at five-year follow-up. Consequently, much has been published regarding the use of psychological therapies in oncology including, but not limited to: counselling; group therapy; relaxation; hypnosis; meditation and imagery. A recently published comprehensive systematic review examined 827 papers that reported on trials of psychological therapies for cancer patients. This review employed stringent criteria for both inclusion and analysis. Hence, its recommendations provide a useful guide for the clinical role of such therapies in cancer patients. A summary of the tentative recommendations of this review is detailed in the table on the previous page, with further investigation of various other interventions also being recommended.

Discussion

This critical review provides an overview of the current evidence regarding the use of four modalities of complementary medicine in oncology. This review is not without limitations. For practical purposes, the review was limited to publications in the English language. Given the origins of the various therapies, a greater appreciation of the available evidence might have been gained if papers published in other languages had been reviewed. While a number of databases were searched, an important database in the field of complementary medicine (CISCOM) was unable to be accessed at the time that this review was conducted. Furthermore, no effort was made to contact experts in the field for references from their own personal collections, or to source unpublished data.

The studies identified in this review revealed a number of factors that make quality research challenging in the field of complementary medicine. For instance, it must be accepted that double-blinded trials are often difficult to conduct, given the nature of the therapy being examined and the therapist’s knowledge. Furthermore, good placebo therapies are not always available and there is a role for the development of such placebos in future research. There is acknowledgement that simply the presence of an empathetic professional may have some therapeutic effect, hence a study that compares an intervention with such a presence, in addition to standard care, should be viewed as more rigorous. The very nature of some complementary therapies may require that treatments are individualised for each patient. Hence a study design which recognises the need for individualisation may provide more meaningful evidence of the efficacy of a particular complementary therapy than one which seeks complete standardisation.

This review demonstrates that there is an emerging body of good evidence to support the use of acupuncture, music therapy, massage and touch therapies and psychological therapies as adjuncts to mainstream treatments for the improvement of symptoms and quality of life. Given the level of patient use of such therapies, there is a real need for further investigation with large, well-designed studies to confirm the recommendations that these complementary therapies should be used in oncology, and to explore their use for the management of symptoms for which the current evidence is minimal.

Disappointingly, the evidence relating to the impact of these complementary therapies on immune function and overall survival was not found to be convincing. The field of psychoneuroimmunology, which considers the psychological modulation of immune function, is well-established in modern scientific literature. Important concepts for cancer include: the impact of stress on natural killer cell cytotoxicity and elimination of metastatic tumour cells; links between stress and carcinogenesis including alteration of DNA repair mechanisms and the possibility of conditioned immune suppression during chemotherapy. The contradictory results regarding immune function and overall survival when psychological therapies were examined, and the poor methodology employed when other complementary therapies were studied, provide inadequate evidence to recommend the use of such therapies to improve immune function or overall survival. The listed hypothesised mechanisms highlight the potential for well-designed, rigorous research to resolve these important issues.
Conclusion

Australians affected by cancer are increasingly using complementary therapies, often without informing their treating physician. Hence it is vital for clinicians to have an understanding of the evidence for the use of complementary therapies, allowing them to openly and effectively discuss such treatments with their patients. Encouragingly, there is emerging evidence that complementary therapies can improve various symptoms and quality of life in cancer patients. Therefore, increasing awareness and utilisation of such therapies has the potential to reduce the impact of cancer on the Australian community. Future research should seek to further clarify these findings and provide an adequate understanding of the impact that complementary therapies may have on immune function and overall survival of cancer patients.

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References