POSITION STATEMENT PROPOSAL ON ANXIETY

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POSITION STATEMENT PROPOSAL ON ANXIETY

BACKGROUND INFORMATION

According to the National Institute of Mental Health, over 40 million adult Americans suffer from anxiety disorders.[1] Anxiety and its disorders shape the quality of life and the health of those individuals affected.[2] Research indicates massage can:

- reduce anxiety:
  - in psychiatric patients[3]
  - in those with chronic pain[4]
  - for cancer patients[5,6,7,8,22,30,32]
  - for patients undergoing bone marrow transplants[7]
  - in children with illnesses[8,9]
  - in nurses[10,39]
  - associated with lower back pain[11,12,13]
  - in those with headaches[15,19,25]
  - in patients awaiting invasive cardiovascular procedures[18]
  - in healthy adults [21]
  - in patients with generalized anxiety disorder[20]
  - in patients under local anesthesia[17,23]
  - in stroke patients[24]
  - in the elderly[24,31]
  - in children and adolescent psychiatric patients[27]
  - in those at the end of life[29]
  - in adults with hand pain[33]
  - in patients with fibromyalgia[34]
  - in patients withdrawing from psychoactive drugs[35]
  - in burned adolescents[36]
  - in patients with congestive heart failure[38]
  - in women in labor[40]
- increase a sense of calm/reduce anxiety after surgery [14, 17, 37]
- reduce anxiety pre-surgery[23]
- reduce trait anxiety with a course of treatment providing benefits similar to psychotherapy[16]
- reduce the psychological and physiological anxiety levels in patients having cataract surgery[17]
- increase neurotransmitters associated with lowering anxiety[28]
- decrease hormones associated with increasing anxiety[28]

RATIONALE

Research shows that both the psychological and physiological symptoms of those suffering from anxiety (in a variety of populations, instances and age groups) may be reduced by incorporating massage into treatment and care. Therefore, individuals who seek relief from anxiety can benefit from massage therapy given by professional massage therapists working within their scope of practice.

The position statement supports portions of the AMTA Core Values as follows:

- We are a diverse and nurturing community working with integrity, respect and dignity.

- We believe in the benefits of massage.

The position statement supports portions of the Vision Statement of AMTA:

- AMTA members are devoted to professionalism and excellence in massage therapy practice.
- Quality research is the foundation for evidence-informed massage therapy education and practice.
- AMTA supports its members in expanding their knowledge through quality education.
- Massage therapy is easily accessible.
- Massage therapy is a vital component of health care and wellness.

The position statement supports portions of the AMTA Strategic Plan Goals and Objectives as follows:

ADVOCACY AND INFLUENCE
Goal: The health care and wellness industry accepts the value of massage therapy.
Objective: Increase understanding of the benefits of massage therapy through education of the health care and wellness industry.

INDUSTRY RELATIONSHIPS
Goal: AMTA is a respected leader within the health care and wellness industry.
Objective: Increase collaboration between AMTA, its members and other health care and wellness industry leaders.

POSITION STATEMENT

It is the position of the American Massage Therapy Association (AMTA) that massage therapy can assist in reducing the symptoms of anxiety.

REFERENCES

1. Anxiety Disorders. (2009). Retrieved April 8, 2009, from National Institute of Mental Health website: http://www.nimh.nih.gov/health/publications/anxiety-disorders/nimhanxiety.pdf

2. Strine, T.W., Chapman, D.P., Kobau, R., Balluz, L. (2005). Associations of self-reported anxiety symptoms with health-related quality of life and health behaviors. Soc Psychiatry Psychiatr Epidemiol, 40(8):680.

   BACKGROUND: Anxiety disorders affect approximately 19 million American adults annually* and have been associated with impaired health-related quality of life (HRQOL), an increased rate of adverse health behaviors, and poor outcomes related to chronic illness in studies conducted in clinical populations. Our study was designed to examine the association of self-reported anxiety symptoms with HRQOL and health behaviors among a representative sample of US community-dwellers.

* It should be noted the differences between this study and the previous citation – the citation from the National Institute of Mental Health gives the figure of 40 million adult Americans with anxiety disorders; this is a more recent statistic coming from a 2009 document.

METHODS: Data were obtained from the Behavioral Risk Factor Surveillance System, an ongoing, state-based, random-digit telephone survey of the noninstitutionalized US population aged > or = 18 years. In 2002, HRQOL measures were administered in 18 states and the District of Columbia.

RESULTS: An estimated 15% of persons reported frequent (> or = 14 days in the past 30 days) anxiety symptoms. After adjusting for frequent depressive symptoms and sociodemographic characteristics, those with frequent anxiety symptoms were significantly more likely than those without to report fair or poor general health (vs. excellent, very good, or good general health), frequent physical distress, frequent activity limitations, frequent sleep insufficiency, infrequent vitality, frequent mental distress, and frequent pain. In addition, they were more likely to smoke, to be obese, to be physically inactive, and to drink heavily.

CONCLUSION: Given their association with impaired HRQOL and adverse health behaviors, our results suggest that assessment of anxiety symptoms should be a facet of routine standard medical examinations.

3. Garner, B., Phillips, L.J., Schmidt, H.M., Markulev, C., O'Connor, J., Wood, S.J., Berger, G.E., Burnett, P., McGorry, P.D. (2008). Pilot study evaluating the effect of massage therapy on stress, anxiety and aggression in a young adult psychiatric inpatient unit. Aust N Z J Psychiatry, 42(5):414-22.

OBJECTIVE: The aim of the present pilot study was to examine the effectiveness of a relaxation massage therapy programme in reducing stress, anxiety and aggression on a young adult psychiatric inpatient unit.

METHOD: This was a prospective, non-randomized intervention study comparing treatment as usual (TAU) with TAU plus massage therapy intervention (MT) over consecutive 7 week blocks (May-August 2006). MT consisted of a 20 min massage therapy session offered daily to patients during their period of hospitalization. The Kennedy Nurses' Observational Scale for Inpatient Evaluation (NOSIE), the Symptom Checklist-90-Revised (SCL-90-R), the State-Trait Anxiety Inventory (STAI) and stress hormone (saliva cortisol) levels were used to measure patient outcomes at admission and discharge from the unit. The Staff Observation Aggression Scale-Revised (SOAS-R) was used to monitor the frequency and severity of aggressive incidents on the unit.

RESULTS: There was a significant reduction in self-reported anxiety ($p < 0.001$), resting heart rate ($p < 0.05$) and cortisol levels ($p < 0.05$) immediately following the initial and final massage therapy sessions. Significant improvements in hostility ($p = 0.007$) and depression scores ($p < 0.001$) on the SCL-90-R were observed in both treatment groups. There was no group x time interaction on any of the measures. Poor reliability of staff-reported incidents on the SOAS-R limited the validity of results in this domain.

CONCLUSIONS: Massage therapy had immediate beneficial effects on anxiety-related

measures and may be a useful de-escalating tool for reducing stress and anxiety in acutely hospitalized psychiatric patients. Study limitations preclude any definite conclusions on the effect of massage therapy on aggressive incidents in an acute psychiatric setting. Randomized controlled trials are warranted.

4. Walach, H., Güthlin, C., König, M. (2003). Efficacy of massage therapy in chronic pain: a pragmatic randomized trial. J Altern Complement Med, 9(6):837-46.

BACKGROUND: Although classic massage is used widely in Germany and elsewhere for treating chronic pain conditions, there are no randomized controlled trials (RCT).

DESIGN: Pragmatic RCT of classic massage compared to standard medical care (SMC) in chronic pain conditions of back, neck, shoulders, head and limbs.

OUTCOME MEASURE: Pain rating (nine-point Likert-scale; predefined main outcome criterion) at pretreatment, post-treatment, and 3 month follow-up, as well as pain adjective list, depression, anxiety, mood, and body concept.

RESULTS: Because of political and organizational problems, only 29 patients were randomized, 19 to receive massage, 10 to SMC. Pain improved significantly in both groups, but only in the massage group was it still significantly improved at follow-up. Depression and anxiety were improved significantly by both treatments, yet only in the massage group maintained at follow-up.

CONCLUSION: Despite its limitation resulting from problems with numbers and randomization this study shows that massage can be at least as effective as SMC in chronic pain syndromes. Relative changes are equal, but tend to last longer and to generalize more into psychologic domains. Because this is a pilot study, the results need replication, but our experiences might be useful for other researchers.

5. Jane, S.W., Wilkie, D.J., Gallucci, B.B., Beaton, R.D., Huang, H.Y. (2009). Effects of a Full-Body Massage on Pain Intensity, Anxiety, and Physiological Relaxation in Taiwanese Patients with Metastatic Bone Pain: A Pilot Study. J Pain Symptom Manage. 37(4):754-63.

Bone involvement, a hallmark of advanced cancer, results in intolerable pain, substantial morbidity, and impaired quality of life in 34%-45% of cancer patients. Despite the publication of 15 studies on massage therapy (MT) in cancer patients, little is known about the longitudinal effects of MT and safety in cancer patients with bone metastasis. The purpose of this study was to describe the feasibility of MT and to examine the effects of MT on present pain intensity (PPI), anxiety, and physiological relaxation over a 16- to 18-hour period in 30 Taiwanese cancer patients with bone metastases. A quasi-experimental, one-group, pretest-posttest design with repeated measures was used to examine the time effects of MT using single-item scales for pain (PPI-visual analog scale [VAS]) and anxiety (anxiety-VAS), the modified Short-Form McGill Pain Questionnaire (MSF-MPQ), heart rate (HR), and mean arterial pressure (MAP). MT was shown to have effective immediate [t(29)=16.5, P=0.000; t(29)=8.9, P=0.000], short-term (20-30 minutes) [t(29)=9.3, P=0.000; t(29)=10.1, P=0.000], intermediate (1-2.5 hours) [t(29)=7.9,

P=0.000; t(29)=8.9, P=0.000], and long-term benefits (16-18 hours) [t(29)=4.0, P=0.000; t(29)=5.7, P=0.000] on PPI and anxiety. The most significant impact occurred 15 [F=11.5(1,29), P<0.002] or 20 [F=20.4(1,29), P<0.000] minutes after the intervention. There were no significant time effects in decreasing or increasing HR and MAP. No patient reported any adverse effects as a result of MT. Clinically, the time effects of MT can assist health care providers in implementing MT along with pharmacological treatment, thereby enhancing cancer pain management. Randomized clinical trials are needed to validate the effectiveness of MT in this cancer population.

6. Imanishi, J., Kuriyama, H., Shigemori, I., Watanabe, S., Aihara, Y., Kita, M., Sawai, K., Nakajima, H., Yoshida, N., Kunisawa, M., Kawase, M., Fukui, K. (2007). Anxiolytic Effect of Aromatherapy Massage in Patients with Breast Cancer. Evid Based Complement Alternat Med.

   We examined how aromatherapy massage influenced psychologic and immunologic parameters in 12 breast cancer patients in an open semi-comparative trial. We compared the results 1 month before aromatherapy massage as a waiting control period with those during aromatherapy massage treatment and 1 month after the completion of aromatherapy sessions. The patients received a 30 min aromatherapy massage twice a week for 4 weeks (eight times in total). The results showed that anxiety was reduced in one 30 min aromatherapy massage in State-Trait Anxiety Inventory (STAI) test and also reduced in eight sequential aromatherapy massage sessions in the Hospital Anxiety and Depression Scale (HADS) test. Our results further suggested that aromatherapy massage ameliorated the immunologic state. Further investigations are required to confirm the anxiolytic effect of aromatherapy in breast cancer patients

7. Smith, M., Reeder, F., Daniel, L., Baramee, J., Hagman, J. (2003). Outcomes of touch therapies during bone marrow transplant. Alternative Therapies in Health and Medicine, 9(1) 40-49.

   Participants were patients 18-70 years old who received either an autologous or allogeneic bone marrow transplant (BMT), mostly for breast cancer or lymphoma, but also for leukemias. An autologous BMT involves the collection of the patient's own bone marrow, which is frozen and reinfused; an allogeneic BMT is the transplantation of another person's marrow.

   The sample population of 61 patients was stratified and randomly assigned to one of three treatments: massage therapy, Therapeutic Touch, or a control group called the friendly visit.

   Subjects in the massage-therapy group received a 30-minute, standardized Swedish massage. Those in the Therapeutic Touch group received a half-hour, standard session, which consisted of conscious energy exchange using the hands as a focus for facilitating healing. Subjects in the friendly visit group spent 30 minutes engaged in social conversation.

   Three outcome variables were measured to assess the effects of touch therapies on people who undergo BMTs: time for engraftment, which occurs when newly infused blood-forming cells begin producing blood; complications during treatment, which involved the measurement of 11 specific functions such as food intake, central nervous

system/neurological, cardiac and circulation; and patients' perception of the benefit of therapy, which involved a survey asking subjects to rate the degree of feelings such as support, comfort, well-being, pain and anxiety.

In the assessment of complications, researchers found that subjects in the massage-therapy group had significantly lower scores for central nervous system or neurological complications, such as disorientation, agitation, anxiety, numbness, headache and insomnia.

"This diminishing effect on neurological complications is important in enhancing the quality of life during BMT," state the study's authors. "Massage-therapy patients may be able to rest more easily, communicate with their family members, and feel less depressed and anxious during this critical time."

No statistical differences were found among the three groups for time for engraftment. Participants in the massage-therapy group perceived that they received significantly greater benefits from the therapy than those in the friendly visit group. Subjects in both the massage-therapy and the Therapeutic Touch group had comfort scores significantly higher than subjects in the friendly visit group.

8. Hughes, D., Ladas, E., Rooney, D., Kelly, K. (2008). Massage therapy as a supportive care intervention for children with cancer. Oncol Nurs Forum, 35(3):431-42.

PURPOSE/OBJECTIVES: To review relevant literature about massage therapy to assess the feasibility of integrating the body-based complementary and alternative medicine (CAM) practice as a supportive care intervention for children with cancer.

DATA SOURCES: PubMed, online references, published government reports, and the bibliographies of retrieved articles, reviews, and books on massage and massage and cancer. More than 70 citations were reviewed.

DATA SYNTHESIS: Massage therapy may help mitigate pain, anxiety, depression, constipation, and high blood pressure and may be beneficial during periods of profound immune suppression. Massage techniques light to medium in pressure are appropriate in the pediatric oncology setting.

CONCLUSIONS: Massage is an applicable, noninvasive, therapeutic modality that can be integrated safely as an adjunct intervention for managing side effects and psychological conditions associated with anticancer treatment in children. Massage may support immune function during periods of immunosuppression.

IMPLICATIONS FOR NURSING: Pediatric oncology nurses are vital in helping patients safely integrate CAM into conventional treatment. Pediatric oncology nurses can help maximize patient outcomes by assessing, advocating, and coordinating massage therapy services as a supportive care intervention.

9. Hernandez-Reif, M., Shor-Posner, G., Baez, J., Soto, S., Mendoza, R., Castillo, R., Quintero, N., Perez, E., Zhang, G. (2008). Dominican Children with HIV not Receiving Antiretrovirals: Massage Therapy Influences their Behavior and Development. Evid Based Complement Alternat

Med, 5(3):345-354

Forty-eight children (M age = 4.8 years) infected with HIV/AIDS and living in the Dominican Republic were randomly assigned to a massage therapy or a play session control group. The children in the massage therapy group received two weekly 20-min massages for 12 weeks; the children in the control group participated in a play session (coloring, playing with blocks) for the same duration and length as the massage therapy group. Overall, the children in the massage therapy group improved in self-help abilities and communication, suggesting that massage therapy may enhance daily functioning for children with HIV/AIDS. Moreover, the HIV infected children who were six or older also showed a decrease in internalizing behaviors; specifically depressive/anxious behaviors and negative thoughts were reduced. Additionally, baseline assessments revealed IQ equivalence below normal functioning for 70% of the HIV infected children and very high incidences of mood problems (depression, withdrawn) for 40% of the children and anxiety problems for 20% of the children, suggesting the need for better monitoring and alternative interventions in countries with limited resources to improve cognition and the mental health status of children infected with HIV/AIDS.

10. Cooke, M., Holzhauser, K., Jones, M., Davis, C., Finucane, J. (2007). The effect of aromatherapy massage with music on the stress and anxiety levels of emergency nurses: comparison between summer and winter. J Clin Nurs, 16(9):1695-703.

AIMS AND OBJECTIVES: This research aimed to evaluate the use of aromatherapy massage and music as an intervention to cope with the occupational stress and anxiety that emergency department staff experience. The study also aimed to compare any differences in results between a summer and winter 12-week massage plan.

BACKGROUND: Emergency nurses are subjected to significant stressors during their work and it is known that workloads and patient demands influence the role stress has on nurses. The perception that winter months are busier for emergency departments has long been held and there is some evidence that people with cardiac and respiratory dysfunction do present more frequently in the winter months. Massage has been found to decrease staff anxiety.

DESIGN: The study used a one-group pre-test, post-test quasi-experimental design with random assignment.

METHOD: Staff occupational stress was assessed pre- and post- 12 weeks of aromatherapy massage with music and anxiety was measured pre and post each massage session. Sick leave was also measured. Comparisons of summer and winter data were undertaken.

RESULTS: A total of 365 massages were given over two 12-week periods, one during summer and the other during winter. Analysis identified that aromatherapy massage with music significantly reduced anxiety for both seasonal periods. Premassage anxiety was significantly higher in winter than summer. No differences in sick leave and workload were found. There was no difference in the occupational stress levels of nurses following

the two 12-week periods of massage.

CONCLUSION: Emergency nurses were significantly more anxious in winter than summer but this cannot be attributed to increased sick leave or workloads. Aromatherapy massage with music significantly reduced emergency nurses' anxiety.

RELEVANCE TO CLINICAL PRACTICE: High levels of anxiety and stress can be detrimental to the physical and emotional health of emergency nurses and the provision of a support mechanism such as on-site massage as an effective strategy should be considered.

11. Brady, L.H., Henry, K., Luth, J.F. 2nd, Casper-Bruett, K.K. (2001). The effects of shiatsu on lower back pain. J Holist Nurs, 19(1):57-70.

Shiatsu, a specific type of massage, was used as an intervention in this study of 66 individuals complaining of lower back pain. Each individual was measured on state/trait anxiety and pain level before and after four shiatsu treatments. Each subject was then called 2 days following each treatment and asked to quantify the level of pain. Both pain and anxiety decreased significantly over time. Extraneous variables such as gender, age, gender of therapist, length of history with lower back pain, and medications taken for lower back pain did not alter the significant results. These subjects would recommend shiatsu massage for others suffering from lower back pain and indicated the treatments decreased the major inconveniences they experienced with their lower back pain.

12. Hernandez-Reif, M., Field, T., Krasnegor, J., Theakston, H. (2001). Lower back pain is reduced and range of motion increased after massage therapy. Int J Neurosci, 106(3-4):131-45.

STUDY DESIGN: A randomized between-groups design evaluated massage therapy versus relaxation for chronic low back pain.

OBJECTIVES: Treatment effects were evaluated for reducing pain, depression, anxiety and stress hormones, and sleeplessness and for improving trunk range of motion associated with chronic low back pain.

SUMMARY of BACKGROUND DATA: Twenty-four adults (M age=39.6 years) with low back pain of nociceptive origin with a duration of at least 6 months participated in the study. The groups did not differ on age, socioeconomic status, ethnicity or gender.

METHODS: Twenty-four adults (12 women) with lower back pain were randomly assigned to a massage therapy or a progressive muscle relaxation group. Sessions were 30 minutes long twice a week for five weeks. On the first and last day of the 5-week study participants completed questionnaires, provided a urine sample and were assessed for range of motion.

RESULTS: By the end of the study, the massage therapy group, as compared to the relaxation group, reported experiencing less pain, depression, anxiety and improved sleep. They also showed improved trunk and pain flexion performance, and their serotonin and

dopamine levels were higher.

CONCLUSIONS: Massage therapy is effective in reducing pain, stress hormones and symptoms associated with chronic low back pain.

PRECIS: Adults (M age=39.6 years) with low back pain with a duration of at least 6 months received two 30-min massage or relaxation therapy sessions per week for 5 weeks. Participants receiving massage therapy reported experiencing less pain, depression, anxiety and their sleep had improved. They also showed improved trunk and pain flexion performance, and their serotonin and dopamine levels were higher.

13. Field, T., Hernandes-Reif, M., Diego, M., Fraser, M. (2007). Lower back pain and sleep disturbance are reduced following massage therapy. Journal of Bodywork and Movement Therapies, 11(2) 141-145.

Summary: A randomized between-groups design was used to evaluate massage therapy versus relaxation therapy effects on chronic low back pain. Treatment effects were evaluated for reducing pain, depression, anxiety and sleep disturbances, for improving trunk range of motion (ROM) and for reducing job absenteeism and increasing job productivity. Thirty adults (M age=41 years) with low back pain with a duration of at least 6 months participated in the study. The groups did not differ on age, socioeconomic status, ethnicity or gender. Sessions were 30 min long twice a week for 5 weeks. On the first and last day of the 5-week study participants completed questionnaires and were assessed for ROM. By the end of the study, the massage therapy group, as compared to the relaxation group, reported experiencing less pain, depression, anxiety and sleep disturbance. They also showed improved trunk and pain flexion performance.

14. Hattan, J., King, L., Griffiths, P. (2002). The impact of foot massage and guided relaxation following cardiac surgery: a randomized controlled trial. J Adv Nurs, 37(2):199-207.

BACKGROUND: Because of the widely presumed association between heart disease and psychological wellbeing, the use of so-called 'complementary' therapies as adjuncts to conventional treatment modalities have been the subject of considerable debate. The present study arose from an attempt to identify a safe and effective therapeutic intervention to promote wellbeing, which could be practicably delivered by nurses to patients in the postoperative recovery period following coronary artery bypass graft (CABG) surgery. Aim. To investigate the impact of foot massage and guided relaxation on the wellbeing of patients who had undergone CABG surgery.

METHOD: Twenty-five subjects were randomly assigned to either a control or one of two intervention groups. Psychological and physical variables were measured immediately before and after the intervention. A discharge questionnaire was also administered.

RESULTS: No significant differences between physiological parameters were found. There was a significant effect of the intervention on the calm scores (ANOVA, P=0.014). Dunnett's multiple comparison showed that this was attributable to increased calm among the massage group. Although not significant the guided relaxation group also reported substantially higher levels of calm than control. There was a clear (nonsignificant) trend across all psychological variables for both foot massage and, to a lesser extent, guided

relaxation to improve psychological wellbeing. Both interventions were well received by the subjects.

CONCLUSIONS: These interventions appear to be effective, noninvasive techniques for promoting psychological wellbeing in this patient group. Further investigation is indicated.

15. Moraska, A., Chandler, C. (2009). Changes in Psychological Parameters in Patients with Tension-type Headache Following Massage Therapy: A Pilot Study. J Man Manip Ther. 17(2):86-94.

Investigations into complementary and alternative medicine (CAM) approaches to address stress, depression, and anxiety of those experiencing chronic pain are rare. The objective of this pilot study was to assess the value of a structured massage therapy program, with a focus on myofascial trigger points, on psychological measures associated with tension-type headache. Participants were enrolled in an open-label trial using a baseline control with four 3-week phases: baseline, massage (two 3-week periods) and a follow-up phase. Eighteen subjects with episodic or chronic tension-type headache were enrolled and evaluated at 3-week intervals using the State-Trait Anxiety Inventory, Beck Depression Inventory, and the Perceived Stress Scale. The Daily Stress Inventory was administered over 7-day periods during baseline and the final week of massage. Twice weekly, 45-minute massage therapy sessions commenced following the baseline phase and continued for 6 weeks. A significant improvement in all psychological measures was detected over the timeframe of the study. Post hoc evaluation indicated improvement over baseline for depression and trait anxiety following 6 weeks of massage, but not 3 weeks. A reduction in the number of events deemed stressful as well as their respective impact was detected. This pilot study provides evidence for reduction of affective distress in a chronic pain population, suggesting the need for more rigorously controlled studies using massage therapy to address psychological measures associated with TTH.

16. Moyer, C.A., Rounds, J., , J.W. (2004). A Meta-Analysis of Massage Therapy Research. APA Psychological Bulletin. 130(1): 3–18.

Massage therapy (MT) is an ancient form of treatment that is now gaining popularity as part of the complementary and alternative medical therapy movement. A meta-analysis was conducted of studies that used random assignment to test the effectiveness of MT. Mean effect sizes were calculated from 37 studies for 9 dependent variables. Single applications of MT reduced state anxiety, blood pressure, and heart rate but not negative mood, immediate assessment of pain, and cortisol level. Multiple applications reduced delayed assessment of pain. Reductions of trait anxiety and depression were MT's largest effects, with a course of treatment providing benefits similar in magnitude to those of psychotherapy. No moderators were statistically significant, though continued testing is needed. The limitations of a medical model of MT are discussed, and it is proposed that new MT theories and research use a psychotherapy perspective.

17. Kim, M. (2001).Effects of hand massage on anxiety in cataract surgery using local anesthesia Journal of Cataract & Refractive Surgery. 27(6): 884-890.

Purpose: To evaluate the effects of hand massage on patient anxiety during cataract surgery.

Setting: Kangnam St. Mary's Hospital, Seoul, Korea.

Methods: This study comprised 59 patients having cataract surgery from December 11, 1996, to February 12, 1997. The patients were divided into those having a hand massage 5 minutes before surgery (experimental group, N = 29) and those not receiving a hand massage (control group, N = 30). Patients' anxiety levels were measured using the Visual Analog Scale and by assessing the systolic blood pressure, diastolic blood pressure, and pulse rate before and after the hand massage and 5 minutes before the end of surgery. Epinephrine, norepinephrine, cortisol, blood sugar levels, neutrophil, and lymphocyte percentages in white blood cells were also measured.

Results: After the hand massage, the psychological anxiety levels, systolic and diastolic blood pressures, and pulse rate were significantly lower than before the massage. The hand massage significantly decreased epinephrine and norepinephrine levels in the experimental group. Epinephrine, norepinephrine, and cortisol levels increased in the control group. The differences between groups were significant. There were no significant between-group differences in blood sugar levels or neutrophil and lymphocyte percentages in white blood cells.

Conclusion: The findings indicate that hand massage decreases the psychological and physiological anxiety levels in patients having cataract surgery under local anesthesia.

18. Wentworth, L.J., Briese, L.J., Timimi, F.K., Sanvick, C.L., Bartel, D.C., Cutshall, S.M., Tilbury, R.T., Lennon, R., Bauer, B.A. (2009). Massage therapy reduces tension, anxiety, and pain in patients awaiting invasive cardiovascular procedures. Prog Cardiovasc Nurs. 24(4):155-61.

    Objectives: (1) To assess the efficacy of a 20 minute massage therapy session on pain, anxiety, and tension in patients before an invasive cardiovascular procedure. (2) To assess overall patient satisfaction with the massage therapy. (3) To evaluate the feasibility of integrating massage therapy into preprocedural practices. Experimental pretest-posttest design using random assignment. Medical cardiology progressive care units at a Midwestern Academic Medical Center. Patients (N=130) undergoing invasive cardiovascular procedures. The intervention group received 20 minutes of hands on massage at least 30 minutes before an invasive cardiovascular procedure. Control group patients received standard preprocedural care. Visual analogue scales were used to collect verbal numeric responses measuring pain, anxiety, and tension pre- and postprocedure. The differences between pre- and postprocedure scores were compared between the massage and standard therapy groups using the Mann-Whitney Wilcoxon's test. Scores for pain, anxiety, and tension scores were identified along with an increase in satisfaction for patients who received a 20-minute massage before procedure compared with those receiving standard care. This pilot study showed that massage can be incorporated into medical cardiovascular units' preprocedural practice and adds validity to prior massage studies.

19. Toro-Velasco, C., Arroyo-Morales, M., Fernández-de-Las-Peñas, C., Cleland, J.A., Barrero-Hernández, F.J. (2009). Short-term effects of manual therapy on heart rate variability, mood state,

and pressure pain sensitivity in patients with chronic tension-type headache: a pilot study. J Manipulative Physiol Ther.32(7):527-35.

OBJECTIVE: The purpose of this study was to investigate the immediate effects of head-neck massage on heart rate variability (HRV), mood states, and pressure pain thresholds (PPTs) in patients with chronic tension-type headache (CTTH).

METHODS: Eleven patients (8 females), between 20 and 68 years old, with CTTH participated in this crossover study. Patients received either the experimental treatment (massage protocol) or a placebo intervention (detuned ultrasound). Holter electrocardiogram recordings (standard deviation of the normal-to-normal interval, square root of mean squared differences of successive NN intervals, index HRV, low-frequency component, and high-frequency component), PPT over both temporalis muscles, and Profile of Mood States questionnaire (tension-anxiety, depression-dejection, anger-hostility, vigor, fatigue, confusion) were obtained preintervention, immediately after intervention, and 24 hours postintervention. Self-reported head pain was also collected preintervention and 24 hours postintervention. Separate analyses of covariance (ANCOVAs) were performed with each dependent variable. The hypothesis of interest was group x time interaction.

RESULTS: The ANCOVA showed a significant group x time interaction for index HRV ($F = 4.5$, $P = .04$), but not for standard deviation of the normal-to-normal interval ($F = 1.1$, $P = .3$), square root of mean squared differences of successive NN intervals ($F = 0.9$, $P = .3$), low-frequency component ($F = 0.03$, $P = .8$), or high-frequency component ($F = 0.4$, $P = .5$) domains. Pairwise comparisons found that after the manual therapy intervention, patients showed an increase in the index HRV ($P = .01$) domain, whereas no changes were found after the placebo intervention ($P = .7$). The ANCOVA also found a significant group x time interaction for tension-anxiety ($F = 5.3$, $P = .03$) and anger-hostility ($F = 4.6$, $P = .04$) subscales. Pairwise comparisons found that after the manual therapy intervention, patients showed a decrease in tension-anxiety ($P = .002$) and anger-hostility ($P = .04$) subscales, whereas no changes were found after the placebo intervention ($P > .5$ both subscales). No significant changes were found in PPT levels (right $F = 0.3$, $P = .6$, left $F = 0.4$, $P = .5$). A significant group x time interaction for pain ($F = 4.8$, $P = .04$) was identified. No influence of sex was found ($F = 1.5$, $P = .3$). Pairwise comparisons showed that head pain (numerical pain rating scale) decreased 24 hours after manual therapy ($P < .05$) but not after the placebo intervention ($P = .9$).

CONCLUSIONS: The application of a single session of manual therapy program produces an immediate increase of index HRV and a decrease in tension, anger status, and perceived pain in patients with CTTH.

20. Billhult, A., Määttä, S. (2008). Light pressure massage for patients with severe anxiety. Complement Ther Clin Pract. 15(2):96-101.

Generalised anxiety disorder (GAD) is common in the western world with a lifetime prevalence of 4.3 to 5.9% and is twice as common in women as in men. GAD can have a decisive impact on a patient's everyday life as it is surrounded by unfocused worries and the severe anxiety may interfere with normal social functions. The treatments include

cognitive behavioral therapy and/or psychopharmacological drugs. In previous studies the positive effects of massage on anxiety have been shown. The present study described the experience of receiving massage for eight patients with GAD. Findings revealed that the patients were able to rediscover their own capacity during the massage period. This was illuminated by the experience of being relaxed in body and mind, the experience of unconditional attention, the experience of decreased anxiety and the experience of increased self-confidence. The paper ends with a discussion of clinical implications.

21. Fernández-Pérez, A.M., Peralta-Ramírez, M.I., Pilat, A., Villaverde, C. (2008). Effects of myofascial induction techniques on physiologic and psychologic parameters: a randomized controlled trial. J Altern Complement Med. 14(7):807-11.

    OBJECTIVES: The objective was to determine the effect of myofascial techniques on the modulation of physiologic and psychologic variables.

    DESIGN: Forty-one (41) healthy male volunteers were randomly assigned to an experimental or control group.

    INTERVENTIONS: The experimental group underwent 3 manual therapy modalities: suboccipital muscle technique, compression of fourth intracranial ventricle, and deep cervical fascia technique. The control group remained in a resting position for the same time period under the same environmental conditions.

    OUTCOME MEASURES: Temperature, heart rate, and systolic and diastolic blood pressure (BP) were measured before, during, and after the intervention. State and trait anxiety levels and depression level were evaluated before and after the intervention.

    RESULTS: Repeated-measures analysis of variance revealed a significant time x groups interaction [$F = 4.7(1,40)$; $p = 0.036$] for state anxiety. There were no significant time x group interaction effects for depression [$F = 0.33(1,40)$; $p = 0.57$] or trait anxiety [$F = 3.76(1,40)$, $p = 0.060$]. Among physiologic parameters, a significant time x group interaction was found for systolic BP [$F = 2.86(6,240)$; $p = 0.033$] and heart rate [$F = 2.89(6,240)$; $p = 0.036$].

    CONCLUSIONS: Psychologic modulation is observed after application of manual therapy techniques, with a decrease in state anxiety in the experimental group. Heart rate and systolic BP were modulated during the course of myofascial induction techniques. All of these effects were observed up to 20 minutes after the therapy.

22. Campeau, M.P., Gaboriault, R., Drapeau, M., Van Nguyen, T., Roy, I., Fortin, B., Marois, M., Nguyen-Tân, P.F. (2007). Impact of massage therapy on anxiety levels in patients undergoing radiation therapy: randomized controlled trial. J Soc Integr Oncol. 5(4):133-8.

    Anxiety is a major issue in the cancer patient population. This randomized phase III trial evaluated the effects of massage therapy on anxiety levels in patients undergoing radiation therapy. Patients undergoing radiation therapy were randomly assigned to either 10 massage sessions or control sessions. Anxiety levels were evaluated throughout the course of treatment using both the visual analogue scale (VAS) and the State-Trait Anxiety

Inventory (STAI). The immediate effect of massage therapy on anxiety scores was measured via pre- and postmassage VAS scores. The intermediate-term effect of massage was assessed through the VAS scores over the 10 sessions and STAI scores at the last session. The trial's primary outcome was the difference in intermediate-term anxiety scores, whereas the secondary outcome was the difference in immediate anxiety scores. Between January 2006 and June 2006, 100 patients were randomized. After their massage, the patients' immediate postmassage anxiety score according to the VAS was reduced by an average of 45% compared with their premassage score ($p < .001$). No impact of massage therapy on intermediate-term anxiety scores was observed. Both groups showed a similar decline in VAS anxiety scores from the first to the last session, that is, 15% and 19% in the massage therapy and control groups, respectively ($p = .73$). Furthermore, no difference was observed between the groups' respective state-anxiety scores after the 10 sessions. Massage therapy is associated with a significant, immediate decrease in anxiety scores. However, massage therapy appears to have no major impact on intermediate-term anxiety in patients undergoing radiation therapy.

23. Oh, H.J., Park, J.S. (2004). Effects of hand massage and hand holding on the anxiety in patients with local infiltration anesthesia, Taehan Kanho Hakhoe Chi. 34(6):924-33.

PURPOSE: This study was to examine the effects of hand massage and hand holding as nursing interventions on the anxiety in patients with local infiltration anesthesia.

METHOD: The design of this study was a nonequivalent, control group, non-synchronized design. The subjects of this study consisted of 15 patients for the hand group, 15 patients for the hand holding group and 17 patients for the control group awaiting surgery in the operation room of a general hospital in Daegu. As an experimental treatment, hand massage was carried out by the Hand Massage Protocol developed by Snyder (1995) and interpreted by Cho (1998) and hand holding developed by Cho (1998). The data were analyzed by SPSS/WIN, T-test, ANOVA, Cronbach's alpha, and the Scheffe test.

RESULTS: The hand massage group and hand holding group were more effective than the control group in reducing anxiety, VAS score, systolic blood pressure and pulse rate.

CONCLUSION: Hand massage and hand holding are effective nursing interventions that alleviates [*sic*] the psychological and physiological anxiety of patients with local infiltration anesthesia. In particular, the simple contact of hand holding is regarded as an effective and easily accessible nursing intervention in the operating room.

24. Mok, E., Woo, C.P. (2004). The effects of slow-stroke back massage on anxiety and shoulder pain in elderly stroke patients. Complement Ther Nurs Midwifery. 10(4):209-16.

This study explores the effect of slow-stroke back massages on anxiety and shoulder pain in hospitalized elderly patients with stroke. An experimental quantitative design was conducted, comparing the scores for self-reported pain, anxiety, blood pressure, heart rate

and pain of two groups of patients before and immediately after, and three days after the intervention. The intervention consisted of ten minutes of slow-stroke back massage (SSBM) for seven consecutive evenings. One hundred and two patients participated in the entire study and were randomly assigned to a massage group or a control group. The results revealed that the massage intervention significantly reduced the patients' levels of pain perception and anxiety. In addition to the subjective measures, all physiological measures (systolic and diastolic blood pressures and heart rate) changed positively, indicating relaxation. The prolonged effect of SSBM was also evident, as reflected by the maintenance of the psycho-physiological parameters three days after the massage. The patients' perceptions of SSBM, determined from a questionnaire, revealed positive support for SSBM for elderly stroke patients. The authors suggest that SSBM is an effective nursing intervention for reducing shoulder pain and anxiety in elderly patients with stroke. From a nursing perspective, this nursing practice provides a challenge and an opportunity for nurses and family caregivers to blend alternative therapies with technology to provide more individualized and holistic patient care.

25. Goffaux-Dogniez, C., Vanfraechem-Raway, R., Verbanck, P. (2003). Appraisal of treatment of the trigger points associated with relaxation to treat chronic headache in the adult. Relationship with anxiety and stress adaptation strategies. Encephale. 29(5):377-90.

Since the 1950's and even still today, the concomitance between headaches and psychological symptoms (anxiety and depression) is the subject of considerable research. Even so, headaches still pose a problem of difficult diagnosis related to their multiform aspect. Their understanding may be regarded as neurological, psychological or musculo-articular. This complexity explains the lack of effectiveness of anti-migraine treatments in certain cases. This situation encourages recourse to complementary procedures such as those used in physiotherapy. The questions that could be posed regarding physiotherapeutic treatment are: Is the treatment effective? How does it act on the level of pain? and How does it act at the psychological level? It is to answer these questions that the work, which is the basis of this article, has been carried out.

METHODOLOGY: Two groups were studied during this research: a group of 25 patients and a reference group of 100 people. The headache patients were sent for physiotherapy by a GP or consultant neurologist. The pathologies retained for experimentation were: migraines without aura; Arnold's neuralgia; headaches of spinal origin; tension headaches and associated migraines. These pathologies are covered in International Headache Society Classification: Essential headache and in Section 45.4 of DSM IV: Painful problems . The physiotherapeutic treatments applied to the patients were: muscular massage and friction plus ultra-sound vibration of the trigger-points in the spinal, scapular, dorsal and facial regions; articular reharmonisation work on the spinal column; thermotherapy and relaxation as a technique allowing control of physical (muscular) and psychological (anxiety, fear of pain) tension to be regained. The treatment is evaluated by comparison of the periodicity and intensity of the headaches before and after treatment; comparison of anxiety (state and trait) before and after treatment and comparison of coping strategies before and after treatment.

RESULTS: As far as the description of the headaches of the patient group is concerned, the periodicity/intensity evaluated each day of the week before the treatment and presented

in graphical form, showed a heterogeneous distribution and did not exhibit any particular characteristics. In addition, the fact of having studied this periodicity/intensity during a period of one week reinforces the reliability of the values found and reinforces the impact, showing clearly that it is not just incidental. The headaches were hereditary in 32-64% of cases; the trigger factors related to stress were the large majority. As far as the treatment used in the population studied is concerned, medication was used punctually, as prescribed. This was in the form of analgesics/antipyretics (68%) or anxiolytics (20%). In 85% of the cases, at the end of the physiotherapy treatment, the person no longer used any medication. The effectiveness of the treatment is clearly illustrated by the fact that the periodicity/intensity of the headaches had diminished significantly after treatment. The physiotherapy treatment lasted for 10 to 20 sessions with an average duration of 14 sessions. The treatment results in a significant reduction in the anxiety trait and the anxiety state as well as a readjustment of the coping strategies. During periods of headache crisis, anxiety and coping strategies are modified significantly. The modifications to these coping strategies during crises are: an increase in auto-accusation, the search for social support, avoidance and strategies for the resolution of emotion prior to treatment; an increase in strategies for the resolution of the problem after treatment; co-ping self-control is diminished if the anxiety state increases and it increases if the anxiety trait increases. Apart from the headache crises, there are no differences in anxiety characteristics or coping strategies between headache sufferers and others except for a greater use of coping avoidance by the headache sufferer.

CONCLUSION: Treatment by relaxation allows for a perceived increase in control of symptoms by the sufferer. Consequently, it reduces anxiety, improves the quality of life and the behavioural responses to stress. In turn, the treatment improves the long-term prognosis for the headaches as well as the health of the sufferer in general. The treatment described here addresses 3 types of people: 1. Sufferers with difficult headaches which do not respond well to medical treatment. 2. People for whom anxiety and coping strategies are very much modified by the headaches. 3. People who abuse medication for the treatment of their headaches.

26. Field, T., Ironson, G., Scafidi, F., Nawrocki, T., Goncalves, A., Burman, I., Pickens, J., Fox, N., Schanberg, S., Kuhn, C. (1996). Massage therapy reduces anxiety and enhances EEG pattern of alertness and math computations. Int J Neurosci. 86(3-4):197-205.

Twenty-six adults were given a chair massage and 24 control group adults were asked to relax in the massage chair for 15 minutes, two times per week for five weeks. On the first and last days of the study they were monitored for EEG, before, during and after the sessions. In addition, before and after the sessions they performed math computations, they completed POMS Depression and State Anxiety Scales and they provided a saliva sample for cortisol. At the beginning of the sessions they completed Life Events, Job Stress and Chronic POMS Depression Scales. Group by repeated measures and post hoc analyses revealed the following: 1) frontal delta power increased for both groups, suggesting relaxation; 2) the massage group showed decreased frontal alpha and beta power (suggesting enhanced alertness); while the control group showed increased alpha and beta power; 3) the massage group showed increased speed and accuracy on math computations while the control group did not change; 4) anxiety levels were lower following the massage but not the control sessions, although mood state was less

depressed following both the massage and control sessions; 5) salivary cortisol levels were lower following the massage but not the control sessions but only on the first day; and 6) at the end of the 5 week period depression scores were lower for both groups but job stress score were lower only for the massage group.

27. Field, T., Morrow, C., Valdeon, C., Larson, S., Kuhn, C., Schanberg, S.(1992). Massage reduces anxiety in child and adolescent psychiatric patients. J Am Acad Child Adolesc Psychiatry. 31(1):125-31.

    A 30-minute back massage was given daily for a 5-day period to 52 hospitalized depressed and adjustment disorder children and adolescents. Compared with a control group who viewed relaxing videotapes, the massaged subjects were less depressed and anxious and had lower saliva cortisol levels after the massage. In addition, nurses rated the subjects as being less anxious and more cooperative on the last day of the study, and nighttime sleep increased over this period. Finally, urinary cortisol and norepinephrine levels decreased, but only for the depressed subjects.

28. Field, T., Hernandez-Reif, M., Diego, M., Schanberg, S., Kuhn, C. (2005). Cortisol decreases and serotonin and dopamine increase following massage therapy. Int J Neurosci. 115(10):1397-413.

    In this article the positive effects of massage therapy on biochemistry are reviewed including decreased levels of cortisol and increased levels of serotonin and dopamine. The research reviewed includes studies on depression (including sex abuse and eating disorder studies), pain syndrome studies, research on auto-immune conditions (including asthma and chronic fatigue), immune studies (including HIV and breast cancer), and studies on the reduction of stress on the job, the stress of aging, and pregnancy stress. In studies in which cortisol was assayed either in saliva or in urine, significant decreases were noted in cortisol levels (averaging decreases 31%). In studies in which the activating neurotransmitters (serotonin and dopamine) were assayed in urine, an average increase of 28% was noted for serotonin and an average increase of 31% was noted for dopamine. These studies combined suggest the stress-alleviating effects (decreased cortisol) and the activating effects (increased serotonin and dopamine) of massage therapy on a variety of medical conditions and stressful experiences.

29. Lafferty, W.E., Downey, L., McCarty, R.L., Standish, L.J., Patrick, D.L. (2006) Evaluating CAM treatment at the end of life: a review of clinical trials for massage and meditation. Complementary Therapeutic Medicine. Jun;14(2):100-12.

    BACKGROUND: There is a pressing need for improved end-of-life care. Use of complementary and alternative medicine (CAM) may improve the quality of care but few controlled trials have evaluated CAM at the end of life.

    OBJECTIVES: To determine the strength of evidence for the benefits of touch and mind-body therapies in seriously ill patients.

    METHODS: Systematic review of randomized controlled trials of massage and mind-body therapies. A PubMed search of English language articles was used to identify the relevant studies.

RESULTS: Of 27 clinical trials testing massage or mind-body interventions, 26 showed significant improvements in symptoms such as anxiety, emotional distress, comfort, nausea and pain. However, results were often inconsistent across studies and there were variations in methodology, so it was difficult to judge the clinical significance of the results.

CONCLUSIONS: Use of CAM at the end of life is warranted on a case-by-case basis. Limitations in study design and sample size of the trials analyzed mean that routine use of CAM cannot be supported. There are several challenges to be addressed in future research into the use of CAM in end-of-life patients.

30. Russell, N.C., Sumler, S.S., Beinhorn, C.M., Frenkel, M.A. (2008) Role of massage therapy in cancer care. Journal of Alternative and Complementary Medicine. Mar;14(2):209-14.

The care of patients with cancer not only involves dealing with its symptoms but also with complicated information and uncertainty; isolation; and fear of disease progression, disease recurrence, and death. Patients whose treatments require them to go without human contact can find a lack of touch to be an especially distressing factor. Massage therapy is often used to address these patients' need for human contact, and findings support the positive value of massage in cancer care. Several reviews of the scientific literature have attributed numerous positive effects to massage, including improvements in the quality of patients' relaxation, sleep, and immune system responses and in the relief of their fatigue, pain, anxiety, and nausea. On the basis of these reviews, some large cancer centers in the United States have started to integrate massage therapy into conventional settings. In this paper, we recognize the importance of touch, review findings regarding massage for cancer patients, describe the massage therapy program in one of these centers, and outline future challenges and implications for the effective integration of massage therapy in large and small cancer centers.

31. Meeks, T.W., Wetherell, J.L., Irwin, M.R., Redwine, L.S., Jeste, D.V. (2007) Complementary and alternative treatments for late-life depression, anxiety, and sleep disturbance: a review of randomized controlled trials. Journal of Clinical Psychiatry. Oct;68(10):1461-71.

OBJECTIVE: We reviewed randomized controlled trials of complementary and alternative medicine (CAM) treatments for depression, anxiety, and sleep disturbance in nondemented older adults.

DATA SOURCES: We searched PubMed (1966-September 2006) and PsycINFO (1984-September 2006) databases using combinations of terms including depression, anxiety, and sleep; older adult/elderly; randomized controlled trial; and a list of 56 terms related to CAM.

STUDY SELECTION: Of the 855 studies identified by database searches, 29 met our inclusion criteria: sample size >or= 30, treatment duration >or= 2 weeks, and publication in English. Four additional articles from manual bibliography searches met inclusion criteria, totaling 33 studies.

DATA EXTRACTION: We reviewed identified articles for methodological quality using a modified Scale for Assessing Scientific Quality of Investigations (SASQI). We categorized a study as positive if the CAM therapy proved significantly more effective than an inactive control (or as effective as active control) on at least 1 primary psychological outcome. Positive and negative studies were compared on the following characteristics: CAM treatment category, symptom(s) assessed, country where the study was conducted, sample size, treatment duration, and mean sample age.

DATA SYNTHESIS: 67% of the 33 studies reviewed were positive. Positive studies had lower SASQI scores for methodology than negative studies. Mind-body and body-based therapies had somewhat higher rates of positive results than energy- or biologically-based therapies.

CONCLUSIONS: Most studies had substantial methodological limitations. A few well-conducted studies suggested therapeutic potential for certain CAM interventions in older adults (e.g., mind-body interventions for sleep disturbances and acupressure for sleep and anxiety). More rigorous research is needed, and suggestions for future research are summarized.

32. Mansky, P.J., Wallerstedt, D.B. (2006) Complementary medicine in palliative care and cancer symptom management. Cancer Journal. Sep-Oct;12(5):425-31.

Complementary and alternative medicine (CAM) use among cancer patients varies according to geographical area, gender, and disease diagnosis. The prevalence of CAM use among cancer patients in the United States has been estimated to be between 7% and 54%. Most cancer patients use CAM with the hope of boosting the immune system, relieving pain, and controlling side effects related to disease or treatment. Only a minority of patients include CAM in the treatment plan with curative intent. This review article focuses on practices belonging to the CAM domains of mind-body medicine, CAM botanicals, manipulative practices, and energy medicine, because they are widely used as complementary approaches to palliative cancer care and cancer symptom management. In the area of cancer symptom management, auricular acupuncture, therapeutic touch, and hypnosis may help to manage cancer pain. Music therapy, massage, and hypnosis may have an effect on anxiety, and both acupuncture and massage may have a therapeutic role in cancer fatigue. Acupuncture and selected botanicals may reduce chemotherapy-induced nausea and emesis, and hypnosis and guided imagery may be beneficial in anticipatory nausea and vomiting. Transcendental meditation and the mindfulness-based stress reduction can play a role in the management of depressed mood and anxiety. Black cohosh and phytoestrogen-rich foods may reduce vasomotor symptoms in postmenopausal women. Most CAM approaches to the treatment of cancer are safe when used by a CAM practitioner experienced in the treatment of cancer patients. The potential for many commonly used botanical to interact with prescription drugs continues to be a concern. Botanicals should be used with caution by cancer patients and only under the guidance of an oncologist knowledgeable in their use.

33. Field, T., Diego, M., Delgado, J., Garcia, D., Funk, CG. (2011). Hand pain is reduced by massage therapy Complement Ther Clin Pract. November 17(4):226-9.

METHODS: Forty-six adults with hand pain were randomly assigned to a massage therapy or a standard treatment control group. Those assigned to the massage therapy group were massaged by a therapist on the affected hand once a week for a 4-week period and were also taught self-massage on the hand that was to be done by the individual participant once daily.

RESULTS: The massage therapy group versus the control group had less pain and greater grip strength after the first and last sessions, and their anxiety and depressed mood scores decreased more than the control group. Over the four-week period the massage group had a greater decrease in pain and a greater increase in grip strength as well as lower scores on anxiety, depressed mood and sleep disturbance scales.

34. Castro-Sánchez, A.M., Matarán-Peñarrocha, G.A., Granero-Molina, J., Aguilera-Manrique, G., Quesada-Rubio, J.M., Moreno-Lorenzo, C. (2011). Benefits of massage-myofascial release therapy on pain, anxiety, quality of sleep, depression, and quality of life in patients with fibromyalgia. Evid Based Complement Alternat Med. 2011:561753

Fibromyalgia is a chronic syndrome characterized by generalized pain, joint rigidity, intense fatigue, sleep alterations, headache, spastic colon, craniomandibular dysfunction, anxiety, and depression. The purpose of the present study was to determine whether massage-myofascial release therapy can improve pain, anxiety, quality of sleep, depression, and quality of life in patients with fibromyalgia. A randomized controlled clinical trial was performed. Seventy-four fibromyalgia patients were randomly assigned to experimental (massage-myofascial release therapy) and placebo (sham treatment with disconnected magnotherapy device) groups. The intervention period was 20 weeks. Pain, anxiety, quality of sleep, depression, and quality of life were determined at baseline, after the last treatment session, and at 1 month and 6 months. Immediately after treatment and at 1 month, anxiety levels, quality of sleep, pain, and quality of life were improved in the experimental group over the placebo group. However, at 6 months postintervention, there were only significant differences in the quality of sleep index. Myofascial release techniques improved pain and quality of life in patients with fibromyalgia.

35. Black, S., Jacques, K., Webber, A., Spurr, K., Carey, E., Hebb, A., Gilbert, R. (2010). Chair massage for treating anxiety in patients withdrawing from psychoactive drugs. J Altern Complement Med. Sep;16(9):979-87.

Therapeutic massage has been proven to be an effective, nonpharmacologic, alternative for managing state and trait anxiety in a variety of clinical situations. However, no controlled study has investigated this effect in an addiction treatment setting.

AIM: The aim of this study was to investigate the effectiveness of chair massage for reducing anxiety in persons participating in an inpatient withdrawal management program for psychoactive drugs.

DESIGN:The design was a randomized, controlled clinical trial conducted from June 2008 to January 2009.

SUBJECTS: Eighty-two (82) adult patients received inpatient treatment for psychoactive drug withdrawal (alcohol, cocaine, and opiates).

SETTING: This study was conducted at the Withdrawal Management Services at the Capital District Health Authority, Halifax, Nova Scotia.

INTERVENTIONS: Subjects were randomly assigned to receive chair massage ($n = 40$) or a relaxation control condition ($n = 42$). Treatments were offered for 3 consecutive days. Standard counseling and pharmacologic management were also offered concurrently to patients in all conditions.

MEASUREMENTS: The primary outcome measure was anxiety assessed using the Spielberger State-Trait Anxiety Inventory (STAI). State and trait anxiety scores were determined immediately prior to and following each treatment intervention.

RESULTS: Analysis of STAI scores showed a significant reduction in state and trait anxiety for both interventions ($p < 0.001$). The magnitude in the reduction in state ($p = 0.001$) and trait ($p = 0.045$) anxiety was significantly greater in the chair massage group where the effect on state anxiety was sustained, at least in part, for 24 hours.

CONCLUSIONS: Within the clinical context of this study, chair massage was more effective that [than] relaxation control in reducing anxiety. Further investigation of chair massage as a potential nonpharmacologic adjunct in the management of withdrawal related anxiety is warranted.

36. Parlak Gürol, A., Polat, S., Akçay, M.N. (2010). Itching, pain, and anxiety levels are reduced with massage therapy in burned adolescents. J Burn Care Res. May-Jun;31(3):429-32.

Burn can be among the most severe physical and psychologic traumas a person may face. Patients with burns commonly have severe itching and pain. Severe itching has also been associated with anxiety, sleep disturbance, and disruption of daily living activities. The addition of complementary treatments to standard care may lead to improved pain management and may offer a safer approach for reducing pain and procedural anxiety for patients with burns. The authors conducted an experimental study to examine whether the effects of massage therapy reduced burned adolescents' pain, itching, and anxiety levels. Sixty-three adolescents were enrolled in this study shortly after admission (mean days = 3 +/- 0.48) at a burn unit in a large university hospital from February 2008 to June 2009. The measures including the pain, itching, and state anxiety were collected on the first and last days of the 5-week study period. The participants had an average age of 14.07 +/- 1.78

years and came usually from the lower socioeconomic strata. The authors observed that massage therapy reduced all these measures from the first to the last day of this study (P < .001). In most cultures, massage treatments are used to alleviate a wide range of symptoms. Although health professionals agree on the use of nonpharmacologic method for patients with burns, these applications are not yet common.

37. Bauer, B.A., Cutshall, S.M., Wentworth, L.J., Engen, D., Messner, P.K., Wood, C.M., Brekke, K.M., Kelly, R.F., Sundt, T.M. 3rd. (2010). Effect of massage therapy on pain, anxiety, and tension after cardiac surgery: a randomized study. Complement Ther Clin Pract. May;16(2):70-5.

Integrative therapies such as massage have gained support as interventions that improve the overall patient experience during hospitalization. Cardiac surgery patients undergo long procedures and commonly have postoperative back and shoulder pain, anxiety, and tension. Given the promising effects of massage therapy for alleviation of pain, tension, and anxiety, we studied the efficacy and feasibility of massage therapy delivered in the postoperative cardiovascular surgery setting. Patients were randomized to receive a massage or to have quiet relaxation time (control). In total, 113 patients completed the study (massage, n=62; control, n=51). Patients receiving massage therapy had significantly decreased pain, anxiety, and tension. Patients were highly satisfied with the intervention, and no major barriers to implementing massage therapy were identified. Massage therapy may be an important component of the healing experience for patients after cardiovascular surgery.

38. Chen, W.L., Liu, G.J., Yeh, S.H., Chiang, M.C., Fu, M.Y., Hsieh, Y.K.(2012). Effect of Back Massage Intervention on Anxiety, Comfort, and Physiologic Responses in Patients with Congestive Heart Failure. J Altern Complement Med. [Epub ahead of print].

Abstract Background: Patients suffering from congestive heart failure (CHF) frequently feel physical suffering and anxiety. Objectives: The researchers investigated whether back massage could reduce anxiety, discomfort, and physical suffering in patients with CHF. The effects of gender and severity-dependent response of back massage on anxiety and discomfort in patients were also analyzed. Design: The study used a quasi-experimental design with one group pretest and posttest. Participants: Sixty-four participants were recruited in southern Taiwan. Outcome measures: The modified State Anxiety Inventory, the discomfort Visual Analogue Scale, electronic blood pressure (BP) gauges, stethoscopes and the pulse oximetry were used in this study. Results: The participants' systolic BP ($F(3, 189)=18.91$, $p<0.01$), diastolic BP ($F(3, 189)=13.40$, $p<0.01$), heart rate ($F(3, 189)=26.28$, $p<0.01$), and respiratory rates ($F(3, 189)=5.77$, $p<0.01$) were significantly decreased after back massage. Oxygen saturation levels showed significant increases ($F(3, 189)=42.82$, $p<0.01$). Male participants revealed a more significant reduction in anxiety than the female participants ($F(1, 50)=7.27$, $p=0.01$). Those with more severe heart failure and greater levels of anxiety ($F(2, 61)=4.31$, $p=0.02$) and systolic BP ($F(2, 61)=3.86$, $p=0.03$) demonstrated significantly greater responses to back massage. Conclusions: Back massage significantly reduced anxiety in the study population. Systolic BP decreased to a greater degree in the male participants, particularly in those with severe heart failure and greater levels of anxiety and higher systolic BP. This study was conducted without a control group. Randomized clinical trials are needed to

validate the effectiveness of back massage on patients with CHF.

39. Engen, D.J., Wahner-Roedler, D.L., Vincent, A., Chon, T.Y., Cha, S.S., Luedtke, C.A., Loehrer, L.L., Dion, L.J., Rodgers, N.J., Bauer, B.A. (2012). Feasibility and effect of chair massage offered to nurses during work hours on stress-related symptoms: a pilot study. Complement Ther Clin Pract. 18(4):212-5.

    This study assessed feasibility and effect of weekly, 15-min chair massages during work for 38 nurses. Mean Perceived Stress Scale-14 (PSS-14), Smith Anxiety Scale (SAS), linear analog self-assessment scale (LASA), and symptom visual analog scale (SX-VAS) scores were tracked at baseline, 5 weeks, and 10 weeks. Of 400 available massage appointments, 329 were used. At 10 weeks, mean PSS-14 score decreased from 17.85 to 14.92 (P = .002); mean SAS score, from 49.45 to 40.95 (P < .001). Mean LASA score increased from 42.39 to 44.84 (P = .006); mean SX-VAS score, from 65.03 to 74.47 (P < .001). Massages for nurses during work hours reduced stress-related symptoms.

40. Mortazavi, S.H., Khaki, S., Moradi, R., Heidari, K., Vasegh Rahimparvar, S.F. (2012). Effects of massage therapy and presence of attendant on pain, anxiety and satisfaction during labor. Arch Gynecol Obstet. 286(1):19-23.

    PURPOSE: To investigate the effects of massage and presenting an attendant on pain, anxiety and satisfaction during labor to clarify some aspects of using an alternative complementary strategy.

    METHODS:120 primiparous women with term pregnancy were divided into massage, attendant and control groups randomly. Massage group received firm and rhythmic massage during labor in three phases. After 30 min massage at each stage, pain, anxiety and satisfaction levels were evaluated. Self-reported present pain intensity scale was used to measure the labor pain. Anxiety and satisfaction were measured with the standard visual analog scale.

RESULTS: Massage group had lower pain state in second and third phases ($p < 0.05$) in comparison with attendant group but reversely, the level of anxiety was lower in attendant group in second and third phases ($p < 0.05$) and satisfaction was higher in massage group in all four phases ($p < 0.001$). The massage group had lower pain and anxiety state in three phases in comparison with control group ($p < 0.05$). Data analysis of satisfaction level showed higher values in four phases in massage group compared with control ($p < 0.001$) and comparison of attendant and control groups showed higher satisfaction in attendant group in phases 2, 3 and 4 as well ($p < 0.001$). Duration of active phase was lower in massage group ($p < 0.001$).

CONCLUSIONS: Findings suggest that massage is an effective alternative intervention, decreasing pain and anxiety during labor and increasing the level of satisfaction. Also, the supportive role of presenting an attendant can positively influence the level of anxiety and satisfaction.