POSITION STATEMENT PROPOSAL ON MASSAGE AND SLEEP

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BACKGROUND INFORMATION

Quality sleep is vital to health and wellness. According to the Centers for Disease Control (CDC):

> "Insufficient sleep is associated with a number of chronic diseases and conditions—such as diabetes, cardiovascular disease, obesity, and depression—which threaten our nation's health. Notably, insufficient sleep is associated with the onset of these diseases and also poses important implications for their management and outcome. Moreover, insufficient sleep is responsible for motor vehicle and machinery-related crashes, causing substantial injury and disability each year. In short, drowsy driving can be as dangerous—and preventable—as driving while intoxicated."[1]

It is estimated that 50 to 70 million Americans experience sleep issues that affect their health.[2]

Research is indicating that massage can improve sleep in:

- children and adolescents[3, 6]
- those with psychiatric disorders[3]
- those who are hospitalized or instatutionalized[3, 12, 13]
- those with lower back pain[4, 5]
- adults[4, 5, 8, 9, 17]
- those with cerebral palsy[6]
- those with fibromyalgia[7]
- those with insominia[8]
- those in pain[4, 5, 9, 10, 13]
- those with hand pain[9]
- those with cancer[10]
- infants[11, 18, 19]
- infants with dyssomnia[11]

- those who have had heart surgery[12]
- those with breast disease[14]
- those with migraines[15]
- caretakers of hospitalized individuals[16]
- the elderly[17]

RATIONALE

Research indicates in varying populations and situations, massage therapy improves sleep and sleep quality. Therefore, people with sleeping issues would benefit from utilizing and incorporating massage therapy given by professional massage therapists working within their scope of practice.

The position statement specifically supports all of AMTA's Core Values:

- We are a diverse and nurturing community working with integrity, respect and dignity.
- We embrace consistency in education.
- We endorse professional standards.
- We believe in the benefits of massage.

The position statement supports the portions of Vision Statements of the AMTA, as follows:

- 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 promotes its members as the highest quality professionals in massage therapy.
- Massage therapy is easily accessible.
- Massage therapy is a vital component of health care and wellness.

The position statement supports the portions of Goals and Objectives of the AMTA, 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.

RESEARCH
Goal: AMTA members are aware of the importance of scientific research to the massage therapy industry.
Objective: Increase the opportunities for members to access massage therapy scientific research through AMTA sources.

POSITION STATEMENT

It is the position of the American Massage Therapy Association (AMTA) that massage therapy can help improve sleep.

REFERENCES

1. Centers for Disease Control and Prevention. (2011). Sleep and Sleep Disorders. Retrieved on January 9, 2012 from the Centers for Disease Control and Prevention website: http://www.cdc.gov/sleep/.

2. Institute of Medicine. (2006). *Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem*. Washington, DC: The National Academies Press.

3. 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.

4. 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

5. 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.

6. Glew, G.M., Fan, M.Y., Hagland, S., Bjornson, K., Beider, S., McLaughlin, J.F. (2010). Survey of the use of massage for children with cerebral palsy. Int J Ther Massage Bodywork.3(4):10-5.

BACKGROUND: Conventional medicine and complementary and alternative medicine (CAM) are merging into the broader field of "integrative medicine." Massage is no longer considered complementary or alternative in some conventional medical circles today.

PURPOSE: We aimed to determine the prevalence of massage use among children with cerebral palsy (CP) in the Pacific Northwest in the United States, the reasons that massage is being used, and the limits of recruitment for a future randomized controlled trial.

METHODS: This study, the first step in a three-stage research plan, was conducted at the Neurodevelopmental and Neurology clinics at Seattle Children's Hospital, a tertiary pediatric hospital that provides service to patients primarily from Washington, Alaska, Montana, and Idaho. As a feasibility study (stage one), it precedes a planned pilot study (stage two), and subsequently, a full-scale randomized controlled trial (stage three) of whether massage can improve the health of children with CP. The study subjects-104 families with a child with CP ranging in age from 17 months to 21 years-were surveyed by the principal investigator and a research assistant in exam rooms at the hospital.

RESULTS: In the families surveyed, 80% of the children had received massage at some point. Massage was currently being used in 51%, and trained professionals were providing the massage in 23%. Most families use massage for musculoskeletal relaxation, to improve quality of life, and to help their children sleep. Lower maternal income was associated with relatives as compared with professional massage therapists providing the massage. Massage therapy use by the mother and more severe CP were significantly associated with current use of massage for the child.

CONCLUSIONS: Most children with CP in the Pacific Northwest have used massage. Most parents surveyed believe that massage is helpful to their child. Additional research is needed to determine whether massage should be routinely recommended for children with CP.

7. 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.

8. Oliveira, D.S., Hachul, H., Goto, V., Tufik, S., Bittencourt, L.R. (2011). Effect of therapeutic massage on insomnia and climacteric symptoms in postmenopausal women. Climacteric. [Epub ahead of print].

Introduction Physiological and psychological alterations in the climacteric period frequently influence women's quality of life. Hot flushes, nocturia, mood alterations, respiratory disturbances, insomnia and restless leg syndrome all affect sleep, and the altered hormonal state in this period impacts the aging process. As hormonal therapy is not indicated in some cases, the search for complementary therapies, such as massage therapy, to improve insomnia in the climacteric period is increasing. Objective To evaluate the effect of therapeutic massage on insomnia and climacteric symptoms in postmenopausal women. Methods Forty-four volunteers were randomly distributed into three groups: therapeutic massage (TM), passive movement (PM) and control (CTL). The women received 32 therapeutic massage sessions and passive movement twice a week. Questionnaires were given in the pre-trial and the 16th and 32nd sessions. The Insomnia Severity Index (ISI), Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI),

Menopause Quality of Life questionnaire (MENQOL), Kupperman Menopausal Index and Lipp Symptoms of Stress Inventory were assessed. In addition, the women underwent polysomnography at baseline and post-treatment. Statistical analyses were calculated using Friedman and Wilcoxon non-parametric tests. The level of significance was fixed at $p \leq 0.05$. Results There was an improvement in ISI in the TM group ($p = 0.000$) and in the PM group ($p = 0.001$). A decrease in the BDI occurred in the TM group ($p = 0.004$), and the MENQOL improved in the TM group ($p = 0.015$). Furthermore, there were no significant differences in polysomnography parameters in the TM group, with only an increase in minimal saturation ($p = 0.053$). Conclusion The TM group exhibited improved subjective data considering the changes in symptoms according to the ISI and the MENQOL and a decrease in symptoms according to the BDI

9. Field T, Diego M, Delgado J, Garcia D, Funk CG. (2011). Hand pain is reduced by massage therapy. Complement Ther Clin Pract. 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

10. Jane, S.W., Chen, S.L., Wilkie, D.J., Lin, Y.C., Foreman, S.W., Beaton, R.D., Fan, J.Y., Lu, M.Y., Wang, Y.Y., Lin, Y.H., Liao, M.N. (2011). Effects of massage on pain, mood status, relaxation, and sleep in Taiwanese patients with metastatic bone pain: a randomized clinical trial. Pain. 2011 Oct;152(10):2432-42.

    To date, patients with bony metastases were only a small fraction of the samples studied, or they were entirely excluded. Patients with metastatic cancers, such as bone metastases, are more likely to report pain, compared to patients without metastatic cancer (50-74% and 15%, respectively). Their cancer pain results in substantial morbidity and disrupted quality of life in 34-45% of cancer patients. Massage therapy (MT) appears to have positive effects in patients with cancer; however, the benefits of MT, specifically in patients with metastatic bone pain, remains unknown. The purpose of this randomized clinical trial was to compare the efficacy of MT to a social attention control condition on pain intensity, mood status, muscle relaxation, and sleep quality in a sample (n=72) of Taiwanese cancer patients with bone metastases. In this investigation, MT was shown to have beneficial within- or between-subjects effects on pain, mood, muscle relaxation, and sleep quality. Results from repeated-measures analysis of covariance demonstrated that massage resulted in a linear trend of improvements in mood and relaxation over time. More importantly, the reduction in pain with massage was both statistically and clinically significant, and the massage-related effects on relaxation were sustained for at least 16-18 hours postintervention. Furthermore, massage-related effects on sleep were associated with within-subjects effects. Future studies are suggested with increased sample sizes, a

longer interventional period duration, and an objective and sensitive measure of sleep. Overall, results from this study support employing MT as an adjuvant to other therapies in improving bone pain management.

11. Dong, H.Y., Wang, W. (2010). Clinical observations on curative effect of TCM massage on dyssomnia of infants. J Tradit Chin Med. 30(4):299-301.

    OBJECTIVE: To observe the curative effect of TCM massage on difficulty in falling asleep, waking during night and other sleep disorder of infants.

    METHODS: The 51 outpatients were treated by basic recipe for massage treatment and modified recipe according to syndromes.

    RESULTS: The total Athens Insomnia Scale (AIS) score 3.2800 +/- 1.5784 after treatment is lower than 9.2400 +/- 1.4286 before treatment ($P < 0.01$), there is statistical difference in AIS scores before and after treatment.

    CONCLUSION: TCM massage can remarkably improve sleep condition of infants with dyssomnia.

12. Nerbass, F.B., Feltrim, M.I., Souza, S.A., Ykeda, D.S., Lorenzi-Filho, G. (2010). Effects of massage therapy on sleep quality after coronary artery bypass graft surgery. Clinics (Sao Paulo). 65(11):1105-10.

    INTRODUCTION: Having poor sleep quality is common among patients following cardiopulmonary artery bypass graft surgery. Pain, stress, anxiety and poor sleep quality may be improved by massage therapy.

    OBJECTIVE: This study evaluated whether massage therapy is an effective technique for improving sleep quality in patients following cardiopulmonary artery bypass graft surgery.

    METHOD: Participants included cardiopulmonary artery bypass graft surgery patients who were randomized into a control group and a massage therapy group following discharge from the intensive care unit (Day 0), during the postoperative period. The control group and the massage therapy group comprised participants who were subjected to three nights without massage and three nights with massage therapy, respectively. The patients were evaluated on the following mornings (i.e., Day 1 to Day 3) using a visual analogue scale for pain in the chest, back and shoulders, in addition to fatigue and sleep. Participants kept a sleep diary during the study period.

    RESULTS: Fifty-seven cardiopulmonary artery bypass graft surgery patients were enrolled in the study during the preoperative period, 17 of whom were excluded due to postoperative complications. The remaining 40 participants (male: 67.5%, age: 61.9 years ± 8.9 years, body mass index: 27.2 kg/m² ± 3.7 kg/m²) were randomized into control (n = 20) and massage therapy (n = 20) groups. Pain in the chest, shoulders, and back decreased significantly in both groups from Day 1 to Day 3. The participants in the massage therapy group had fewer complaints of fatigue on Day 1 (p=0.006) and Day 2 (p=0.028) in addition, they reported a more effective sleep during all three days (p=0.019) when compared with the participants in the control group.

CONCLUSION: Massage therapy is an effective technique for improving patient recovery from cardiopulmonary artery bypass graft surgery because it reduces fatigue and improves sleep.

13. Adams, R., White, B., Beckett, C. (2010). The effects of massage therapy on pain management in the acute care setting. Int J Ther Massage Bodywork. 3(1):4-11.

BACKGROUND: Pain management remains a critical issue for hospitals and is receiving the attention of hospital accreditation organizations. The acute care setting of the hospital provides an excellent opportunity for the integration of massage therapy for pain management into the team-centered approach of patient care.

PURPOSE AND SETTING: This preliminary study evaluated the effect of the use of massage therapy on inpatient pain levels in the acute care setting. The study was conducted at Flagstaff Medical Center in Flagstaff, Arizona-a nonprofit community hospital serving a large rural area of northern Arizona.

METHOD: A convenience sample was used to identify research participants. Pain levels before and after massage therapy were recorded using a 0 - 10 visual analog scale. Quantitative and qualitative methods were used for analysis of this descriptive study.

PARTICIPANTS: Hospital inpatients (n = 53) from medical, surgical, and obstetrics units participated in the current research by each receiving one or more massage therapy sessions averaging 30 minutes each. The number of sessions received depended on the length of the hospital stay.

RESULT: Before massage, the mean pain level recorded by the patients was 5.18 [standard deviation (SD): 2.01]. After massage, the mean pain level was 2.33 (SD: 2.10). The observed reduction in pain was statistically significant: paired samples $t(52) = 12.43$, $r = .67$, $d = 1.38$, $p < .001$. Qualitative data illustrated improvement in all areas, with the most significant areas of impact reported being overall pain level, emotional well-being, relaxation, and ability to sleep.

CONCLUSIONS: This study shows that integration of massage therapy into the acute care setting creates overall positive results in the patient's ability to deal with the challenging physical and psychological aspects of their health condition. The study demonstrated not only significant reduction in pain levels, but also the interrelatedness of pain, relaxation, sleep, emotions, recovery, and finally, the healing process.

14. Pruthi, S., Degnim, A.C., Bauer, B.A., DePompolo, R.W., Nayar, V. (2009). Value of massage therapy for patients in a breast clinic. Clin J Oncol Nurs. 13(4):422-5.

This article examines interest in massage therapy and other forms of complementary and alternative medicine among patients with breast disease. Surveys were mailed to 63 patients who had a breast abnormality or a recent diagnosis of breast cancer and received complimentary massage therapy at Mayo Clinic in Rochester, MN, from February to April 2005. Thirty-five patients responded (56% response rate). All participants felt that massage therapy was effective in helping them relax, and 34 felt that it was very or

somewhat effective in reducing muscle tension. More than 75% reported that massage therapy was effective in reducing fatigue, creating a general feeling of wellness, and improving sleep quality and their ability to think clearly. Although this study was small, the findings show that massage therapy may help patients with breast disease relax and feel better overall.

15. Lawler, S.P., Cameron, L.D. (2006). A randomized, controlled trial of massage therapy as a treatment for migraine. Ann Behav Med. 32(1):50-9.

BACKGROUND: Migraine is a distressing disorder that is often triggered by stress and poor sleep. Only one randomized controlled trial (RCT) has assessed the effects of massage therapy on migraine experiences, which yielded some promising findings.

PURPOSE: An RCT was designed to replicate and extend the earlier findings using a larger sample, additional stress-related indicators, and assessments past the final session to identify longer-term effects of massage therapy on stress and migraine experiences.

METHODS: Migraine sufferers (N = 47) who were randomly assigned to massage or control conditions completed daily assessments of migraine experiences and sleep patterns for 13 weeks. Massage participants attended weekly massage sessions during Weeks 5 to 10. State anxiety, heart rates, and salivary cortisol were assessed before and after the sessions. Perceived stress and coping efficacy were assessed at Weeks 4, 10, and 13.

RESULTS: Compared to control participants, massage participants exhibited greater improvements in migraine frequency and sleep quality during the intervention weeks and the 3 follow-up weeks. Trends for beneficial effects of massage therapy on perceived stress and coping efficacy were observed. During sessions, massage induced decreases in state anxiety, heart rate, and cortisol.

CONCLUSIONS: The findings provide preliminary support for the utility of massage therapy as a nonpharmacologic treatment for individuals suffering from migraines.

16. Mackereth, P., Sylt, P., Weinberg, A., Campbell, G. (2005). Chair massage for carers in an acute cancer hospital. Eur J Oncol Nurs. 9(2):167-79

The Chair Massage service considered in this evaluation study was provided to carers, visiting in-patients at a major cancer hospital in the UK. The two-stage evaluation comprised: firstly, a retrospective review of treatment records for the previous 12 months (n=182), and secondly, a prospective study, gathering data by interview and a 'next-day' questionnaire from carers (n=34), during 1 week of service delivery. The study at both stages sought to identify who used the service, post-treatment comments and changes in scores using a Feeling Good Thermometer (Field, T., 2000. Touch Therapy. Churchill Livingstone, London). During the second stage the carers were also asked about their concerns and worries, and to report changes in physical and emotional states using visual scales. Findings included significant improvements in physical and psychological scores; these were retained through to the next day. The next-day questionnaire also reported improved sleep for the majority of carers. A number of concerns and worries were raised at interview, notably anxieties about the patient and uncertainty about the future, family

and financial worries. Overall, the service was well evaluated with parents and in particular female carers appearing to gain the most from the intervention.

17. Chen, M.L., Lin, L.C., Wu, S.C., Lin, J.G. (1999). The effectiveness of acupressure in improving the quality of sleep of institutionalized residents. J Gerontol A Biol Sci Med Sci. 54(8):M389-94.

BACKGROUND: Elderly people often suffer from disturbed sleep. Because traditional Chinese medicine indicates that acupressure therapy may induce sedation, testing the effectiveness of acupressure in enhancing the quality of sleep of institutionalized residents with a well-designed scientific study is needed.

METHODS: A randomized block experimental design was used. The Pittsburgh Sleep Quality Index (PSQI) questionnaire was used as a screening tool to select subjects with sleep disturbance. By matching the effects of hypertension, hypnosis, naps, and exercise, subjects were randomly assigned to an acupressure group, a sham acupressure group, and a control group. Each group had 28 subjects for a total of 84 subjects. The same massage routine was used in the acupressure group and the sham acupressure group, whereas only conversation was employed in the control group.

RESULTS: There were significant differences in PSQI subscale scores of the quality, latency, duration, efficiency, disturbances of sleep, and global PSQI scores among subjects in the three groups before and after interventions. Furthermore, there was a significant reduction in the frequencies of nocturnal awakening and night wakeful time in the acupressure group compared to the other two groups.

CONCLUSIONS: This study confirmed the effectiveness of acupressure in improving the quality of sleep of elderly people and offered a nonpharmacological therapy method for sleep-disturbed elderly people.

18. Field, T., Grizzle, N., Scafidi, F., Abrams, S., & Richardson, S. (1996). Massage therapy for infants of depressed mothers. Infant Behavior and Development 19, 109-114.

METHOD: Forty full-term 1- to 3-month-old infants born to depressed adolescent mothers who were low socieconomic status (SES) and single parents were given 15 minutes of either massage or rocking for 2 days per week for a 6-week period.

RESULTS: The infants who experienced massage therapy compared to infants in the rocking control group spent more time in active alert and active awake states, cried less, and had lower salivary cortisol levels, suggesting lower stress. After the massage versus the rocking sessions, the infants spent less time in an active awake state, suggesting that massage may be more effective than rocking for inducing sleep. Over the 6-week period, the massage-therapy infants gained more weight, showed greater improvement on emotionality, sociability, and soothability temperament dimensions and had greater decreases in urinary stress catecholamines/hormones (norepinephrine, epinephrine, cortisol).

19. Field,T. & Hernandez-Reif, M. (2001). Sleep problems in infants decrease following massage therapy. Early Child Development and Care, 168, 95-104.

RESULTS: Based on parent diaries the massaged versus the control children (who were read bedtime stories) showed fewer sleep delay behaviors and had a shorter latency to sleep onset by the end of the study. Forty-five minute behavior observations by an independent observer also revealed more time awake, alert and active and more positive affect in the massaged children by the end of the study.