



American Music Therapy Association

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Habilitation: Music Therapy Research and Evidence-Based Practice Support

STATEMENT OF PURPOSE: Music therapy is a well-established professional health discipline that uses music as the therapeutic stimulus to achieve therapeutic goals. In serving persons with a variety of chronic conditions, and particularly conditions with no known cure or with permanent disabilities, music therapists shift their therapeutic focus from rehabilitation to habilitation and quality of life. In this common situation music therapists utilize music in a mediating context to maintain and enable functioning, communication, healthy socio-emotional expression, and/or specific skills. For some clients, the special skills and qualifications of the music therapist replace traditional music and arts training so that the client may have access to a musical arts experience and normalcy.

Research supports connections between speech and singing, rhythm and motor behavior, memory for song and memory for academic (functional support) material, and overall ability of preferred music to enhance mood, attention, and behavior to enable the client to maintain or optimize function. Many clients with chronic or untreatable conditions suffer from anxiety and low mood. There is a promising and growing body of research related to the impact of music therapy on mood and psycho-emotional state. Overall, the strength of evidence is solid. Music therapy interventions undergo periodic systematic review for quality of evidence.

For children with special needs, music therapy is recognized as a related service. Music therapy serves as an integral component in helping the child with special needs attain educational goals identified by his/her Individualized Education Program (IEP) team, either through direct or consultant services. For clients with state (e.g., Division of Developmental Disabilities) or insurance supported services, the music therapist is an active part of a multidisciplinary allied health team providing therapeutic services.

STANDARDIZATION: Music therapy sessions are documented in a treatment plan and delivered in accordance with standards of practice. Music selections and certain active music-making activities are modified for client preferences and individualized needs (i.e., song selection, materials, and music may vary). Music therapy techniques and approaches are founded in a variety of well established theoretical models and approaches.

REPLICATION: Yes; has also been used with different providers and populations.

TYPICAL OUTCOMES:

- Develop socially appropriate behaviors and interpersonal skills
- Eliminate maladaptive behaviors
- Develop cognitive skills related to daily functioning

Develop constructive use of leisure and recreation time
Develop or remediate communication skills
Improve mood and affective states
Improve quality of life (with caregiver, as needed)
Develop successful and safe self-expression

OVERVIEW OF RESEARCH

Habilitation: to enable, or make able. Habilitation services are designed to develop, maintain and/or maximize the individual's independent functioning.

Given a definition of habilitation this document lists additional music therapy research and includes international studies that address questions of habilitation. The listing, below, is far from comprehensive and is intended as a sampling of studies. Topics include autism/pervasive development disorders, quality of life, palliative care, medical, developmental disabilities, and motor disorders. Finally, an example of cost implications is provided to demonstrate the potential service and cost efficiencies gained from music therapy in habilitation (and rehabilitation).

AUTISM/PERVASIVE DEVELOPMENT DISORDERS

Kielinen, M., Linna, S. L., & Moilanen, I. (2002). Some aspects of treatment and habilitation of children and adolescents with autistic disorder in Northern-Finland. *International Journal of Circumpolar Health*, 61(Suppl. 2), 69–79.

Abstract: Hospital records and data on the treatment/habilitation status of 187 children with autism aged 3-18 years were gathered from Northern Finland. The treatment programs and therapies varied, depending on the trained staff available. One-hundred and fifty-two (82.9%) children and adolescents with autism received more than one therapeutic intervention or specific training program. The most common therapies were physiotherapy as well as speech, occupational and music therapy. 43.9% of the children and adolescents with autism received specific training according to TEACCH (Treatment and Education of Autistic and related Communication-Handicapped Children), 10.2% according to Lovaas and 30.5% according to the Portage program. Antiepileptic medication had been prescribed to 23.9% and psychopharmacological interventions to 14.9% of the individuals with autistic disorder (AD). One hundred and seventy-eight subjects out of 187 showed some improvement on the Childhood Autism Rating Scale (CARS), even if no statistically significant difference was found between the outcome of the available habilitation methods.

QUALITY OF LIFE

Hilliard, R. E. (2003). The effects of music therapy on the quality and length of life of people diagnosed with terminal cancer. *Journal of Music Therapy*, 40(2), 113–137.

Abstract: The purpose of this study was to evaluate the effects of music therapy on quality of life, length of life in care, physical status, and relationship of death occurrence to the final music therapy interventions of hospice patients diagnosed with terminal

cancer. Subjects were adults who were living in their homes, receiving hospice care, and were diagnosed with terminal cancer. A total of 80 subjects participated in the study and were randomly assigned to one of two groups: experimental (routine hospice services and clinical music therapy) and control (routine hospice services only). Groups were matched on the basis of gender and age. Quality of life was measured by the Hospice Quality of Life Index-Revised (HQOLI-R), a self-report measure given every visit. Functional status of the subjects was assessed by the hospice nurse during every visit using the Palliative Performance Scale. All subjects received at least two visits and quality of life and physical status assessments. A repeated measures ANOVA revealed a significant difference between groups on self-report quality of life scores for visits one and two. Quality of life was higher for those subjects receiving music therapy, and their quality of life increased over time as they received more music therapy sessions. Subjects in the control group, however, experienced a lower quality of life than those in the experimental group, and without music, their quality of life decreased over time. There were no significant differences in results by age or gender of subjects in either condition. Furthermore, there were no significant differences between groups on physical functioning, length of life, or time of death in relation to the last scheduled visit by the music therapist or counselor. This study provides an overview of hospice/palliative care, explains the role of music therapy in providing care, and establishes clinical guidelines grounded in research for the use of music therapy in improving the quality of life among the terminally ill.

Kemper, K. J., & Danhauer, S. C. (2005). Music as therapy. *Southern Medical Journal*, 98(3), 282–288.

Abstract: Music is widely used to enhance well-being, reduce stress, and distract patients from unpleasant symptoms. Although there are wide variations in individual preferences, music appears to exert direct physiologic effects through the autonomic nervous system. It also has indirect effects by modifying caregiver behavior. Music effectively reduces anxiety and improves mood for medical and surgical patients, for patients in intensive care units and patients undergoing procedures, and for children as well as adults. Music is a low-cost intervention that often reduces surgical, procedural, acute, and chronic pain. Music also improves the quality of life for patients receiving palliative care, enhancing a sense of comfort and relaxation. Providing music to caregivers may be a cost-effective and enjoyable strategy to improve empathy, compassion, and relationship-centered care while not increasing errors or interfering with technical aspects of care. [References: 84]

Myskja, A. (2005). Therapeutic use of music in nursing homes. *Tidsskrift for Den Norske Laegeforening*, 125(11), 1497–1499.

Abstract: BACKGROUND: There is growing interest in the therapeutic use of music in nursing homes. The difficulties inherent in medical treatment of this population warrant further studies of music as a therapeutic modality. MATERIAL AND METHODS: This is a review of articles on the use of music and music therapy in geriatrics. Findings from a nursing home project, "Music in the late stages of life", have been compared with those reported in the literature, particularly from meta-analyses and systematic reviews. The distinction between music therapy, music medicine and individualised music has been taken into account. RESULTS AND INTERPRETATION: The evidence base for using

music therapeutically in nursing homes is still insufficient. There is a lack of consensus about criteria for the use of different types of music therapy, and most studies have methodological limitations or are insufficiently defined. Approaches to measurement and evaluation vary. Meta-analyses have tried to overcome this problem by emphasizing effect size. A widely shared conclusion is that music can supplement medical treatment. The cost is low, there are few side effects, and music gives a high level of patient satisfaction. Clinical experience and analyses of effect size indicate that music has a specific potential in nursing homes. It can enhance well-being and alleviate symptoms like agitation, anxiety, depression, and sensomotor symptoms in neurodegenerative diseases; it may also contribute in palliative care at the end-of-life stage. [References: 30]

PALLIATIVE CARE

Clements-Cortes, A. (2004). The use of music in facilitating emotional expression in the terminally ill. *American Journal of Hospice & Palliative Care*, 21(4), 255–260.

Abstract: The expression and discussion of feelings of loss and grief can be very difficult for terminally ill patients. Expressing their emotions can help these patients experience a more relaxed and comfortable state. This paper discusses the role of music therapy in palliative care and the function music plays in accessing emotion. It also describes techniques used in assisting clients to express their thoughts and feelings. Case examples of three in-patient palliative care clients at Baycrest Centre for Geriatric Care are presented. The goals set for these patients were to decrease depressive symptoms and social isolation, increase communication and self-expression, stimulate reminiscence and life review, and enhance relaxation. The clients were all successful in reaching their individual goals.

MEDICAL

Abdi, S., Khalessi, M. H., Khorsandi, M., & Gholami, B. (2001). Introducing music as a means of habilitation for children with cochlear implants. *International Journal of Pediatric Otorhinolaryngology*, 59(2), 105–113.

Abstract: OBJECTIVE: To investigate the feasibility, methods and the primary results of utilizing music as a means of habilitation of children with cochlear implant. STUDY DESIGN: A habilitation program based on music training is developed. The results are presented as a case-series. METHODS: Music Training Program is introduced as a new habilitation program. Methods of training (based on Orff method) and measuring the outcomes are introduced in this paper. Effects of this program on other habilitation programs and overall hearing related skills of children were also investigated by open questioning of the parents and the habilitation staff. RESULTS: Twenty-three children, (age: 2.5-12.5 years) were selected. All children showed appreciable progress in playing a musical instrument. The effects on other habilitation processes were significant and all

parents expressed their satisfaction with the program, as they perceived its benefits. **DISCUSSION:** The necessity of adding Music Training Program to the routine habilitation may be summarized as follows: Music is a feature of sound, which should be mastered. The psychological effects of being able to accomplish a hearing-related task can add to the self-esteem of children and help prevent and reduce anxiety. Music is a habilitation method: Introducing new concepts of sound, like temporal and frequency-related characteristics, is a crucial part of the habilitation of a child with cochlear implant. Practising new concepts needs motivation, too. We emphasize on using all means of rehabilitation and encourage teaching music to cochlear implant children between 4 and 5 years of age having approximately 4 months of experience with cochlear implant.

Baker, F., & Wigram, T. (2004). The immediate and long-term effects of singing on the mood states of people with traumatic brain injury. *British Journal of Music Therapy*, 18(2), 55–64.

Abstract: Mood changes in four male participants with traumatic brain injury (TBI) were observed following their participation in a 15-session song-singing programme. An analysis of the song material was undertaken to categorise the songs according to the predominant mood they portrayed. Results showed significant differences between participants for all moods ($p < 0.001$). Immediate effects were reversed where participants experienced increases in sadness, anger, fear and fatigue. Long-term effects were significant for some participants who reported increased feelings of happiness and decreased feelings of sadness, fear, confusion, tension and fatigue. Characteristics of the songs chosen for therapy were typically representative of feelings of sadness. Findings suggest that immediate effects of song-singing intensify and provide cathartic experiences for people with TBI who may not have any other space for which to express negative emotions. Long-term effects on song singing have a positive effect on mood state.

Baker, F., Wigram, T., & Gold, C. (2005). The effects of a song-singing programme on the affective speaking intonation of people with traumatic brain injury. *Brain Injury*, 19(7), 519–528.

Abstract: Objective- To examine changes in the relationship between intonation, voice range and mood following *music therapy* programmes in people with traumatic *brain injury*. Research design: Data from four case studies were pooled and effect size, ANOVA and correlation calculations were performed to evaluate the effectiveness of treatment. Methods and procedures: Subjects sang three self-selected songs for 15 sessions. Speaking fundamental frequency, fundamental frequency variability, slope, voice range and mood were analysed pre- and post-session. Results: Immediate treatment effects were not found. Long-term improvements in affective intonation were found in three subjects, especially in fundamental frequency. Voice range improved over time and was positively correlated with the three intonation components. Mood scale data showed that immediate effects were in the negative direction whereas there were increases in positive mood state in the longer-term. Conclusions: Findings suggest that, in the long-term, song singing can improve vocal range and mood and enhance the affective intonation styles of people with TBI.

Hardcastle, J. (1999). A single session of music therapy decreased anxiety and improved

relaxation in adults who required mechanical ventilation [commentary on Chlan L. Effectiveness of a music therapy intervention on relaxation and anxiety for patients receiving ventilatory assistance]. *Heart & Lung: Journal of Acute & Critical Care*, 27(3), 169–176.

Abstract: Question - Does a single session of music therapy increase relaxation and reduce anxiety in adults who receive mechanical ventilation: Design: Randomised controlled trial. Setting: 4 intensive care units of 3 urban university teaching hospitals in midwestern USA. Patients: 54 adults (age range 18-89 v, mean age 57 v, 92% white, 59% women) who were in the intensive care unit and needed mechanical ventilation. Inclusion criteria were being alert and mentally competent, having adequate hearing, speaking English as the primary language, and not receiving continuous intravenous sedation. Follow up was 91%. Intervention: All patients were provided with a restful atmosphere for 30 minutes: blinds were closed, lights were dimmed, a "do not disturb" sign was put on the door of each patient's room, and patients were told to relax and to think of something pleasant. 27 patients were allocated to receive 30 minutes of music therapy using cassette tape players and headphones. Music contained no lyrics, was designed to be relaxing, and had 60-80 beats/minute. Patients chose from classical, New Age, country and western, religious, and easy listening music. 27 patients received no music (rest alone group). Main outcome measures: Self reported state anxiety (feelings of tension, apprehension, nervousness, and worry) was measured using the Spielberger State-Trait Anxiety Inventory at baseline and after treatment. Physiological relaxation was assessed using heart and respiratory rate changes over time. Main results: Patients chose classical (56%), country and western (28%), easy listening (12%), and New Age (4%) music. Patients in the music group had a lower mean score for state anxiety than patients in the rest alone group (10.1 v 16.2, $p < 0.001$), and also had a greater reduction over time in heart and respiratory rate ($p < 0.001$ for both). Conclusion: A single 30 minute music session reduced anxiety and increased relaxation (reduced heart and respiratory rate) for adults in the intensive care unit who required mechanical ventilation.

Nayak, S., Wheeler, B. L., Shiflett, S. C., & Agostinelli, S. (2000). Effect of music therapy on mood and social interaction among individuals with acute traumatic brain injury and stroke. *Rehabilitation Psychology*, 45(3), 274–283.

Abstract: Objective: To investigate the efficacy of *music therapy* techniques as an aid in improving mood and social interaction after traumatic brain injury or stroke. Design: Eighteen individuals with traumatic brain injury or stroke were assigned either standard *rehabilitation* alone or standard *rehabilitation* along with *music therapy* (3 treatments per week for up to 10 treatments). Measures: Pretreatment and posttreatment assessments of participant self-rating of mood, family ratings of mood and social interaction, and therapist rating of mood and participation in *therapy*. Results: There was a significant improvement in family members' assessment of participants' social interaction in the *music therapy* group relative to the control group. The staff rated participants in the *music therapy* group as more actively involved and cooperative in *therapy* than those in the control group. There was a trend suggesting that self-ratings and family ratings of mood showed greater improvement in the *music* group than in the control group. Conclusions: Results lend preliminary support to the efficacy of *music therapy* as a complementary *therapy* for social functioning and participation in *rehabilitation* with a trend toward improvement in mood during acute *rehabilitation*.

DEVELOPMENTAL DISABILITIES

Aldridge D., Gustroff G., & Neugebauer L. (1995). A pilot study of music therapy in the treatment of children with developmental delay. *Complementary Therapies in Medicine*, 3(4), 197–205.

Abstract: In a crossover study of music therapy for children who are developmentally delayed, the children in the initial treatment group change more than the children on the waiting list. When the waiting list group are treated and then tested, the newly treated children catch up in their development. Such changes can be demonstrated at a level of clinical significance. There is a continuing improvement in hearing and speech, hand-eye co-ordination, and personal-social interaction. Music therapy seems to have an effect on personal relationship, emphasising the positive benefits of active listening and performing, and this in turn sets the context for developmental change. A further investigation of the data revealed the importance of hand-eye co-ordination for developmental changes. The active element of musical playing, which demands the skill of hand-eye co-ordination, appears to play a significant role in developmental changes as they occur in the therapeutic musical relationship.

MOTOR DISORDERS

Pacchetti, C., Mancini, F., Aglieri, R., Fundaro, C., Martignoni, E., & Nappi, G. (2000). Active music therapy in Parkinson's Disease: An integrative method for motor and emotional rehabilitation. *Psychomotric Medicine*, 62, 386–393.

Abstract: Explored the efficacy of active music therapy (MT) on motor and emotional functions in patients with Parkinson's Disease (PD). The study lasted 3 months and consisted of weekly sessions of MT and physical therapy (PT). 32 patients with PD, all stable responders to levodopa and in Hoehn and Yahr stage 2 or 3, were randomly assigned to 2 groups; 16 Ss (mean age 62.5 yrs) received MT and PT, and 16 (mean age 63.2 yrs) received PT alone. Severity of PD was assessed with the Unified Parkinson's Disease Rating Scale, emotional functions with the Happiness Measure, and quality of life using the Parkinson's Disease Quality of Life Questionnaire. MT sessions consisted of choral singing, voice exercise, rhythmic and free body movements, and active music involving collective invention. PT sessions included a series of passive stretching exercises, specific motor tasks, and strategies to improve balance and gait. Results show that MT had a significant overall effect on bradykinesia. Post-MT session findings were consistent with motor improvement, especially in bradykinesia items. Changes on the Happiness Measure confirmed a beneficial effect of MT on emotional functions. Improvements in activities of daily living and in quality of life were also documented in the MT group. PT improved rigidity.

COST-EFFECTIVENESS

Walworth, D. D. (2005). Procedural support music therapy in the healthcare setting: A cost-effective analysis. *Journal of Pediatric Nursing*, 20(4), 276–284.

Abstract: This comparative analysis examined the cost-effectiveness of music therapy as a procedural support in the pediatric healthcare setting. Many healthcare organizations are actively attempting to reduce the amount of sedation for pediatric patients undergoing various procedures. Patients receiving music therapy-assisted computerized tomography scans (n = 57), echocardiograms (n = 92), and other procedures (n = 17) were included in the analysis. Results of music therapy-assisted procedures indicate successful elimination of patient sedation, reduction in procedural times, and decrease in the number of staff members present for procedures. Implications for nurses and music therapists in the healthcare setting are discussed.