1st WORLD CONGRESS ON HEALTHY AGEING

19 – 22 March, 2012

www.healthyageingcongress.org

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Malaysian Healthy Ageing Society

Co-Sponsored:

World Health Organization

Music in Medicine – An Overview

Sharon Chong
MD, ALCM

World Congress on Healthy Ageing
Kuala Lumpur Convention Centre
19th March 2012

Music & Healing from Antiquity

- Therapeutic potentials advocated by philosophers , musicologists, physicians

"The relationship between music and medicine is both intimate and ancient... For thousands of years, healers have recognized the power of sound vibrations and music to affect the healing process"

http://www.musicmedicine.org/Recent_News.php

Dr Elizabeth Jacobi, PhD, RMT
Founder & Director of The Music Medicine Institute, Georgia

Pythagoras: Music & Space

- Physician, musicologist, mathematician
- Founder of scientific age
- Creator of preconditions for utilizing harmonically structure music in medicine
- Music of the Spheres

http://www.haikutimes.com

"Music hath charms to soothe the savage breast, To soften rocks, or bend a knotted oak."

William Congreve, “The Mourning Bride, Act 1”, 1697

http://en.wikipedia.org/wiki/William_Congreve

“Music exalts each joy, allays each grief, expels diseases, softens every pain, subdues the rage of poison, and the plague.”

John Armstrong M.D. (1709-1779), “The Art of Preserving Health”

http://www.todayinsci.com/A/Armstrong_John/ArmstrongJohnBio.htm

"You can look at disease as a form of disharmony. And there's no organ system in the body that's not affected by sound and music and vibration."

Mitchell Gaynor, M.D., “Sounds of Healing”

http://www.gaynoroncology.com/what-s-the-buzz-sound-therapy.html

Music Therapy & Music Medicine

- Clinical and evidence-based use of music +/- its elements by certified MTs to accomplish individualized goals within a therapeutic relationship

(WFMT, AMTA)

- A non-pharmacological intervention adjunct/complementary to medical treatments for stress, anxiety +/- pain by non-MTs healthcare personnel

(Dileo, 1999)

Methods

Table 2. Methods in music therapy

http://www.karger.com/gazette/70/rose/art_3.htm

Receptive music therapy		Active music therapy	
Relaxing, palliative	Rehabilitative /functional	Reproductive	Productive
• Live at the bedside	• Guided imagery and music	• Singing songs	• Assisted composition
• Sound meditation	• Functional music therapy	• Work with rhythm	• Improvisation

Receptive music therapy using the monochord at the patient's bedside in an acute medical situation at the Tumor Biology Center in Freiburg, Germany

Stroke patient doing rhythmic auditory stimulation-based gait training with a metronome and a physical therapist at the Center for Biomedical Research in Music, Colorado State University (photo courtesy of Michael Thaut).

Active music therapy using African drums. The musical dialogue between patient and therapist is played improvisationally, simultaneously and fully spontaneously.

How does music make a difference?

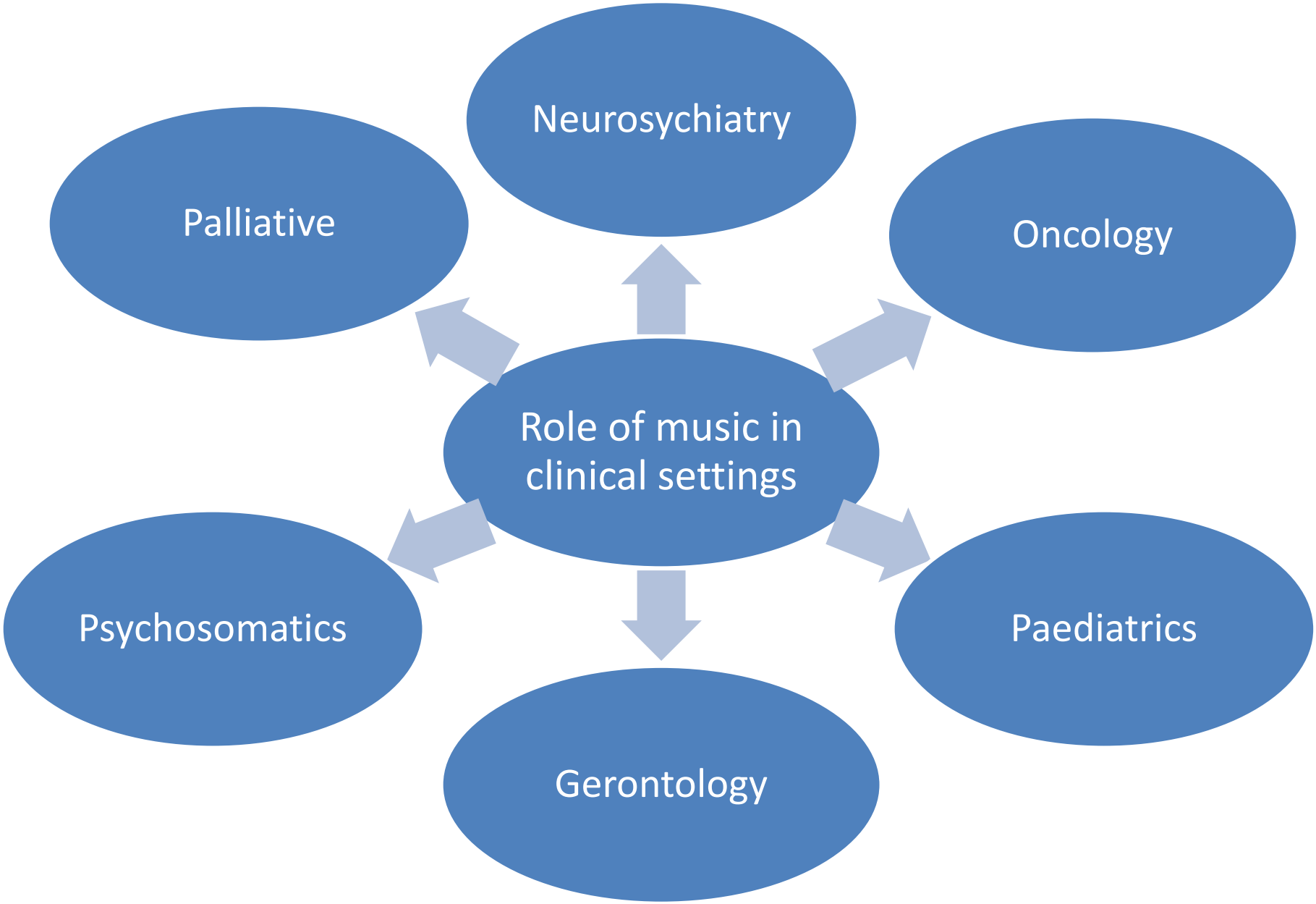


Table 1. Clinical fields and conditions suitable for treatment with music therapy, with the authors' evaluation of the validity of active versus receptive therapeutic modes (●●● = high, ● = low)

Clinical field	Selected conditions/goals	Active	Receptive
Psychosomatics	Tinnitus, pain, burn out, stress	●●●	●●
Psychiatry	Depression, schizophrenia	●●●	●
Neurology	Stroke with hemiparesis, memory performance, fine motor action, fine motor function in speech	●●●	●●
Oncology	Illness adjustment, audioanalgesia, anxiety reduction, life quality, expression of emotions	●●	●●●
Pediatrics	Autism, anxiety reduction, migraine, neonatology	●●●	●
Gerontology	Dementia, reduction in agitation	●●●	●
Palliative medicine	Audioanalgesia, anxiety reduction, terminal care	●	●●●

http://www.karger.com/gazette/70/rose/art_3.htm

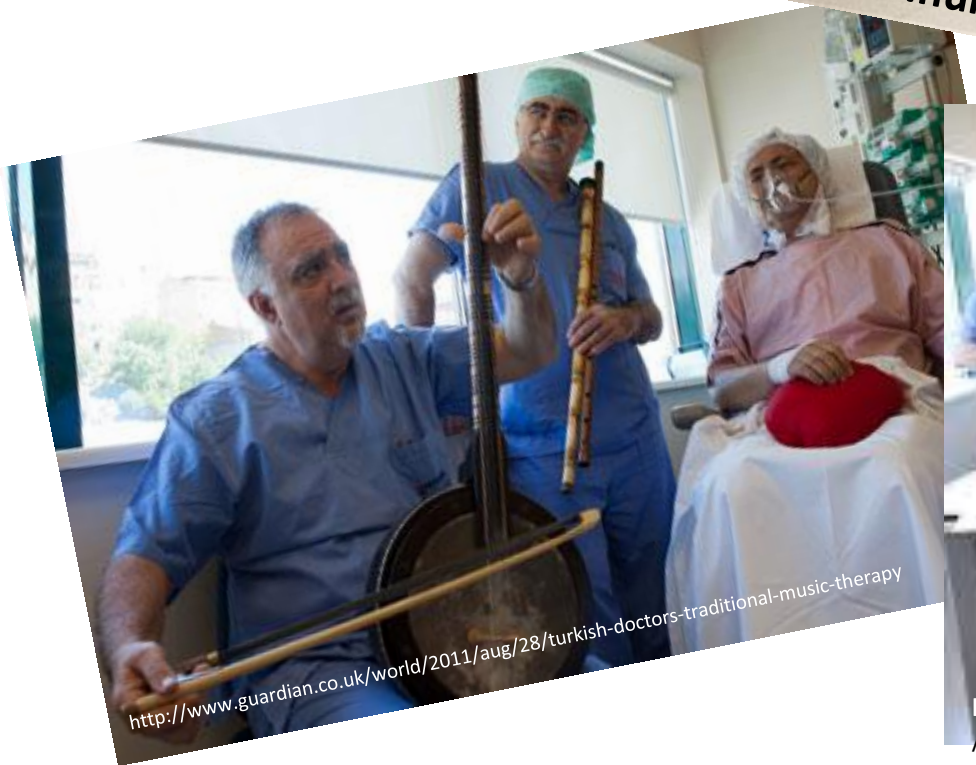
Music played in the session is neither an end in itself, nor just recreational, but a reflection of the patient's inner world, and an expression of their feelings

http://en.ccom.edu.cn/academics/iomt/introduction

In China...

In Turkey...


www.hurriyetdailynews.com


http://www.guardian.co.uk/world/2011/aug/28/turkish-doctors-traditional-music-therapy


http://www.telegraph.co.uk/news/picturegalleries/theweekinpictures

In Slovakia...


http://www.flickr.com/photos/dianiro/2649621353/


http://funstuffcafe.com/cuteness-overload-newborns-with-gigantic-headphones-in-music-therapy

In Japan...

In Thailand...

http://musictherapyabroad.blogspot.com/


http://www.healthyfellow.com/


http://sumathysundar.com/


6
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http://news.medill.northwestern.edu/chicago/n


http://parenthots.com/


in.reuters.com/article/2011/06/30/idINIndia-58010420110630

U.S.News & WORLD REPORT

Reprinted from September 1-8, 2008

HEALTH, MONEY & EDUCATION

therapy in Parkinson's patients has found motor control to be better in those who participated in group music sessions—improvisation with pianos, drums, cymbals, and xylophones—than in people who underwent tradi-

Listening to music prior to surgery decreases anxiety and heart rate as much as an antianxiety drug.

says Sacks. "One would not expect to see

last year … Spanish investigation showed … to surg… rate, a… cortis… drug … Stress… one rea… Alzhei… ories … say. P… hand… nifi… Alz… M… S… h…

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U.S.News & WORLD REPORT

Reprinted from September 1-8, 2008

NEUROLOGY

When Music Becomes Medicine for the Brain

Specialists are prescribing rhythm and melody for conditions from Parkinson's to stroke

By Matthew Shulman

Rande Davis Gedaliah's 2003 diagnosis of Parkinson's was followed by leg spasms, balance problems, difficulty walking, and ultimately a serious fall in the shower. But something remarkable happened when the 60-year-old public-speaking coach turned to an oldies station on her shower radio: She could move her leg with ease, her balance improved, and she couldn't stop dancing. Now, she puts on her iPod and pumps in Springsteen's "Born in the U.S.A." when she wants to walk quickly; for a slower pace, Queen's "We Are the Champions" does the trick.

Music therapy has been practiced for decades as a way to treat neurological conditions from Parkinson's and Alzheimer's to anxiety and depression. Now, advances in neuroscience and brain imaging are revealing what's actually happening in the brain as patients listen to music or play instruments and why the therapy works. "It's been substantiated only in the last year or two that music therapy can help restore the loss of expressive language in patients with aphasia" following brain injury from stroke, says Oliver Sacks, the noted neurologist and professor at Columbia University, who explored the link between music and the brain in his recent book *Musicophilia*. Beyond improving movement and speech, he says, music can trigger the release of mood-altering brain chemicals and once-lost memories and emotions.

Attuned. Parkinson's and stroke patients benefit, neurologists believe, because the human brain is innately attuned to respond to highly rhythmic music; in fact, says Sacks, our nervous system is unique among mammals in its automatic tendency to go into foot-tapping mode. In Parkinson's patients with bradykinesia—slowness of or difficulty initiating movement—it's thought that the music triggers networks of neurons to translate the cadence into organized movement. "We see patients develop something like an auditory timing mechanism," says Concetta Tomaino, cofounder of the Institute for Music and Neurologic Function in New York City. "Someone who is frozen can immediately release and begin walking. Or if they have balance problems, they can coordinate their steps to synchronize with the music," improving their gait and stride. Slow rhythms can ease the muscle bursts and jerky motions of Parkinson's patients with involuntary tremors.

Actually playing music, which requires coordinating muscle movements and developing an ear for timing, can also bring dramatic results, says Rick Bausman, a musician and the founder and director of the Martha's Vineyard–based Drum Workshop. The workshop uses traditional drum ensembles, in which groups of participants play percussion pieces, as one form of therapy for patients with a variety of cognitive and physical disabilities, including Parkinson's disease. Bausman teaches participants to play along with traditional Afro-Caribbean beats like the Haitian *kongo* and Cuban *bembe* using congas, bongos, and *djun-djun* drums. "Participants report that their control of physical movement improves after playing the drums, their motion becomes more fluid, they don't shake quite as much, and their tremors seem to calm down," says Bausman.

Indeed, research on the effects of music

THE WALL STREET JOURNAL.

TUESDAY, NOVEMBER 17, 2009

HEALTH JOURNAL

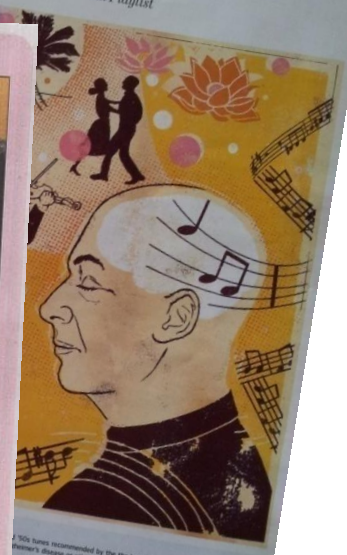
A Key for Unlocking Memories

Music Therapy Opens a Path to the Past for Alzheimer's Patients; Creating a Personal Playlist

By Melinda Beck

One of the raps on iPods is that users tend to close …

that haven't been accessible due to degenerative disease."



ST PHOTO: CHEW SENG KIM

Hearing-impaired kindergarten children involved in a music therapy session with Dr Tan.

Music therapy cannot cure diseases, but can speed the healing process

Elderly-care group sings the praises of music therapy

Scientific Music Medicine

Natural Medicine enters Scientific Medicine through the doors of the Harmony Laws of the Microcosm of Music

Theme: Medical Resonance Therapy Music® – Scientific Research

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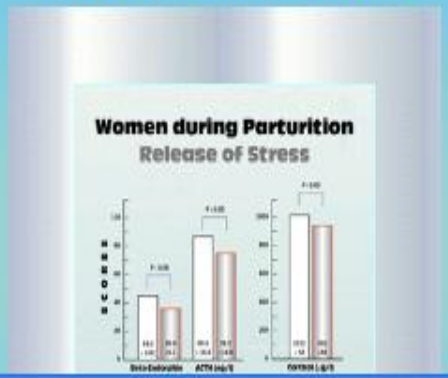
Through Science we verify



Relaxation
Recreation
Rejuvenation

THE EFFECT OF NADA YOGA CHIKITSA (MUSIC THERAPY) ON NON-INVASIVE CONTINUOUS CARDIAC OUTPUT & PERIPHERAL BLOOD FLOW PARAMETERS AND QUALITY OF LIFE MEASURES

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[2]Nada Yoga Raga Sagara Research Center, Avadhoota Datta Peetham, Mysore, India

Introduction

Nada Yoga Chikitsa (Music Therapy) is an interpersonal process in which a trained music therapist uses music to help patients improve or maintain their health. Music therapists help patients improve their level of functioning and quality of life in various domains (e.g., cognitive functioning, motor skills, behavior and social skills) by using music experiences (e.g., singing, listening, moving to music) to achieve measurable treatment goals and objectives.

The Raga Ragini System of Indian Classical music is a specialized healing technique, currently being used by Sri Ganapathi Sachchidananda Swamiji, Pontiff, Avadhoota Datta Peetham, Mysore in a modified method corresponding to the client's Raasi (Zodiac Sign), temperament, and disease condition by playing a chosen Healing Raga (Tune).

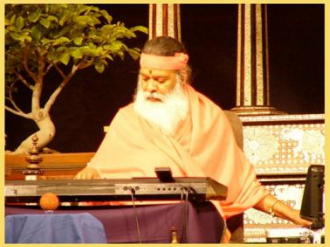

Figure 1: Sri Swamiji performing Nada Yoga Chikitsa

There were many studies supporting music therapy as an adjuvant therapy in producing positive health-related outcomes in cardiac rehabilitation patients; however, this pilot study was aimed to establish evidence with measures of physiological and

Figure 2: Subjects waiting for Music Therapy

Methods

Participants

There were 60 subjects screened initially and 17 were excluded because they did not match inclusion criteria. Therefore, 43 total subjects were enrolled (average age 54 ± 13 yr) for the study who were required to commit to either a daily session of music intervention for at least four days in one week (daily music therapy, DMT; n=17; average age 54.6 ± 17.5 yr) or a four week once-a-week music intervention session (weekly music therapy, WMT; n=19; average age 56.3 ± 8.4 yr). There was a control group of 7 subjects (CG, average age 48.1± 8.6 yr).

The data was collected at the SGS Hospital Music Therapy Centre, Avadhoota Datta Peetham, Mysore, India.

Intervention

Healing tunes were played from a unique composition "Pancha Tattva Raga Malika"* corresponding to the five elements of nature- earth, water, fire, air, and ether. Each session with DMT, WMT, or CG participants lasted for 30 min. CG subjects were asked to rest and focus on breathing without listening to music.

**Music available on www.yogasangeeta.org or iTunes*

Figure 3: Subjects Waiting

Figure 4: Listening to Music

Parameters

On the first and last day of study period, all subjects were given the following questionnaires:
-State-Trait Anxiety Inventory (STAI)
-Dartmouth Primary Care Cooperative Information
-Functional Health Assessment (COOP)
-Visual Analog Pain Scale (VAPS) pre & post

The following parameters were observed using Nivomon (Non-invasive Continuous Cardiac Output & Peripheral Blood Flow Monitor):
-Heart Rate Variability (HRV)
-Cardiac Output Variability (COV)
-Blood Flow Variability (BFV)
-Stroke Volume Variability (SVV)

Results

Due to dropouts, only 33 subjects' (DMT = 11; WMT = 15; CG = 7) STAI, COOP, and PAS data was analyzed for statistical purposes. The data was analyzed based on the distribution of the data (parametric and non-parametric) by using appropriate statistical methods.

There were decreased levels of STAI scores in both DMT and WMT subjects as compared with control group and improved COOP scores of overall health and its sub-domains. Pain analog scores were reduced significantly after the music therapy session in both DMT and WMT subjects with a higher magnitude in the daily group.

All the Cardiac Output & Peripheral Blood Flow parameters showed sympatho-vagal balance with more parasympathetic dominance.

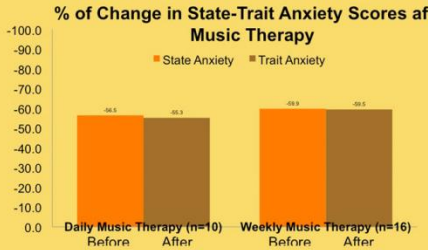

Figure 1: Shows % of Change in State-Trait Anxiety for DMT and WMT Participants.

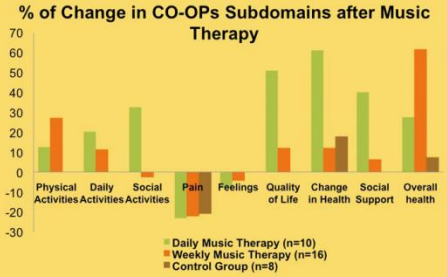

Figure 2: Shows % of Change in CO-OPs Sub-Domains

Results

Figure 3: Shows % of Change in Visual Analog Pain Scale

Changes in Non-Invasive Continuous Cardiac output and Peripheral Blood Flow Variables

Group	Total Power	Low Frequency		Mid Frequency		High Frequency	
		Area	Amplitude	Area	Amplitude	Area	Amplitude
Music Therapy (Pre-Post)	↑HRV, ↑RRV, ↑COV	↓HRV	↓HRV, ↓COV, ↓BFV	--	--	↑BFV	↑HRV*, ↑BFV*
Control (Pre-Post)	No Change in HRV, RRV, COV, SSV	↑BFV	↑BFV	↑RRV ↑BFV	↑BFV	--	--

* Indicates p<0.05

Figure 4: Shows NIVOMON Data

Conclusion

This study supports previous studies on music therapy as a cardiac rehabilitation intervention in conjunction with conventional treatment, but with comprehensive scientific evidence of subjective and objective assessments.

Further studies are required in post-operative conditions to evaluate the efficacy of Nada Chikitsa in surgical hospital settings.

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International & Regional Organizations

World Federation of Music Therapy
Federación Mundial de Musicoterapia

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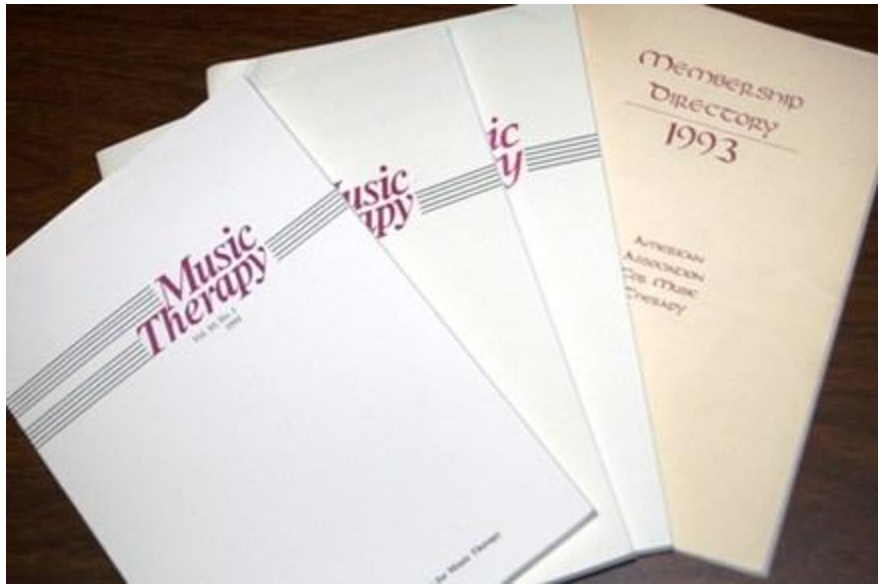
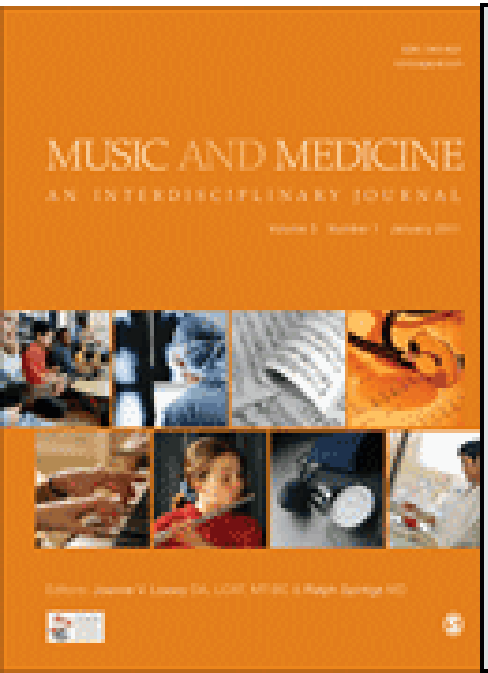
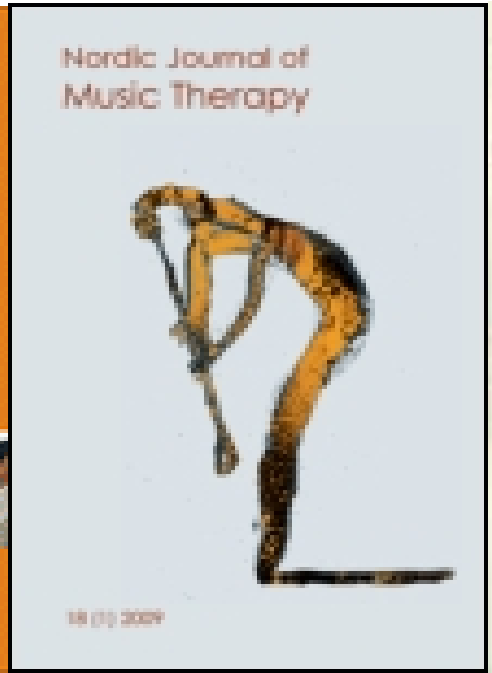
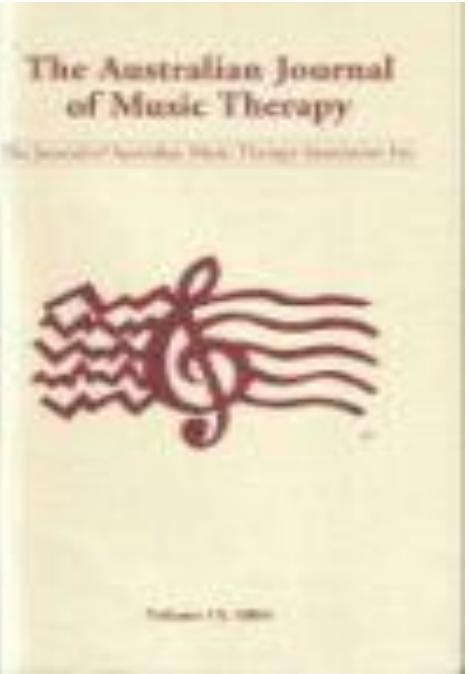
Publications









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THANK YOU

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