

Annual Newsletter

SOUNDEFFECTS

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LCMTR

The LAURIER CENTRE for MUSIC THERAPY RESEARCH

Music at the Centre

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A NOTE FROM THE

CANADIAN CORNER



Celebrating our 20th year in Music Therapy at WLU

Dr. Rosemary Fischer's faculty, graduates and friends...

Low Frequency Sound Research

This short introduction is to remind all colleagues in the field of music therapy that our methods of intervention include live music making, composition, and receptive methods, and to recall a comment Juliette Alvin made on the 1982 BBC 2 programme on Music as Therapy that she "... had to learn physiology -- and that is not romantic or emotional, but you can't have the emotional effect of music without the physical effect...". We mustn't underestimate the physical value of music vibration.



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A Message of Introduction



This year at the LCMTR has been a time of transition and growth. We have concentrated on establishing low frequency research projects. The centre was recipient of a very generous gift from Steve and Eve Menich in 2006, which allowed us to purchase the first low frequency Physioacoustic sound wave therapy chairs in Canada.

Petri Lehtikoinen and a group of Finnish experts spent twenty years developing the Physioacoustic Sound Wave Therapy System for therapeutic purposes. The computer creates and controls low-frequency sinusoidal sound waves, which are broadcast through their speakers. The person sitting on the chair feels relaxation or massage as sympathetic resonance within muscles and other tissues. The physioacoustic chair is a piece of medically approved FDA (in USA) and BSI (in UK) equipment for a wide range of medical conditions and sports injuries. Similar in concept to the high frequency sound waves used in ultrasound treatment, physioacoustic sound wave therapy has three medical claims: improving blood circulation, reducing pain, and relaxing muscles (Lehtikoinen & Turunen, 2004, pp. 2-4). The chair uses low frequencies between 27-113 Hz. There are American Physical Therapy Association (APTA) has named the treatment as Physioacoustic Massage. It has a code and has been registered as Next Wave Chair TM, medically approved and is classified as II (low risk, non invasive).

On November 2006 we conducted the Physioacoustic seminar in which Mr. Marco Kärkkäinen from Finland introduced the history of low frequency devices and gave an introductory session of client populations who could benefit the treatments. (You can read Marco's articles in our Newsletter no.3).

This is why the topic of this newsletter low frequency sound related research. I am grateful to the international authors who contributed their articles in order to introduce their projects or thoughts on this topic: Dr. Tony Wigram, Märtha Bergström-Isacsson, Dr. Peter Tiidus, Dr. Quincy Almeida, Lauren King, Dr. Ulla Hairo-Lax, Esa Ala-Ruona, Marko Punkanen, Dr. Ylanko, etc.

During casual observations, low sound wave therapy has been shown to have a calming effect on Alzheimer's patients when programmed to 40Hz – the frequency lost during anesthesia and the early stages of Alzheimer's – but the reasons are unknown. My dream is to be able to explore this benefit as part of our new research project. This year LCMTR has teamed up with Laurier's Movement Disorders Research and Rehabilitation Centre (MDRC) and Dr. Quincy Almeida to study of Parkinson's patients while undergoing the therapy. According to the results there were significant effects for walking, coordination, and tremor during the Physioacoustic treatment. LCMTR has also teamed up with Dr. Peter Tiidus, Department of Kinesiology and Physical Education to study the Physio Acoustic Therapy and Placebo Effect in Muscle Recovery. There have also been other research proposals with various associations.

Hope you enjoy this Newsletter and become excited on low frequency sound treatments and research!

Waterloo, Ontario, June 23rd, 2007

Heidi Ahonen-Eerikainen
Director, LCMTR



In this article I want to summarize the conditions that, according to previous low frequency research projects are responding well to low frequency based treatment. I also want to introduce the common frequencies used. This information can be used as a starting point for future research projects.

40 Hz and 68 Hz are effective with autistic children (Skille, 1989; Skille & Wigram, 1995, p. 38; Persoons, J., DeBacker, J., 1997) and frequencies under 60 Hz are effective for Rett's syndrome. According to Wigram (1997) children relaxed and their hyperventilation and tension reduced. Vibroacoustic treatment has been used with hearing-impaired clients (Skille, 1992). Darrow & Goll (1989) and Darrow (1992) also studied how the Somatron improved rhythm identification and pitch discrimination.

There have been previous studies with parkinsonism and vibroacoustic by San Vicente, Manchola and Serna (1997) in Txagorritxu Hospital, Basque Health Service. 40Hz frequency was used with 60 patients with Parkinson's disease. This double-blind randomized study combined music and low frequency waves vs. music without low frequency waves. There was also a follow-up later one year. The Scale of Daily Activities and the Exploration of Motor aspects were used. There was a subjective assessment by the patients themselves and by the medical doctor. The assessment of the results was positive in the areas of movement, personal autonomy and memory. This year at the LCMTR we conducted a parkinsons research in collaboration with Marco Kärkkäinen in which we used 30Hz frequency (Almeida, King, Ahonen-Eerikainen, 2007). The results were significant as Dr. Quincy Almeida's and Lauren King's article in this newsletter will show.

Lehikoinen (1994, 1997) studied that the 40Hz frequency may reinforce the thalamus frequency which is also 40Hz (Galambos, Makeing, Tamachoff, 1981, cited in Lehikoinen, 1994, p. 27). [Delta wave frequency is approximately 0.5-4 Hz, Theta 4-8 Hz, alpha 8-13 Hz, beta 13-30 Hz, and gamma is appr 20-80 Hz (Bressler, 1990,

cited in Lehikoinen, 1994, p. 27).] There has also been some evidence that the 40Hz brain wave is disturbed or disappears in the early stages of Alzheimer disease (Linas & Ribary, 1992, 1993). According to Lehikoinen (1994) Physioacoustic treatment, based on the 40Hz frequency, reinforces the thalamus frequency. Because Thalamus has a role in the cognitive brain functioning it would be crucial to stimulate it in the early stages of Alzheimer disease. If the 40 Hz has been disturbed or disappeared it may come back if stimulated by the Physioacoustic method. The future research at LCMTR is to find out if the thalamus frequency can be reinforced by the physioacoustic method. If so the 40Hz frequency-intervention can be a potential intervention for stroke, alzheimer or other brain injured clients.

40 Hz and 60Hz has also been effective when treating a wide range of spasticity (Skille & Wigram, 1995; Wigram, 1997). 40Hz and 60Hz frequencies have been effective alone and in combination with physiotherapy when treating cerebral palsy. There has been some results in reducing muscle tone (Skille, 1989; Skille & Wigram, 1995, p. 41- 44). 40 Hz has been effective in multiple sclerosis. According to Skille (1989) and Skille & Wigram (1995) "reduction of rigidity and considerable palliative effect has been reported" (p. 40). 40 Hz has been useful when used with patients suffering from rheumatoid arthritis (Chesky, Rubin & Friske, 1992). Results show that music vibration reduced some pain. 40 Hz has also been used when treating polyarthritis, especially in hands and chest (Skille, 1989; Skille & Wigram, 1995, p. 40).

Michel and Chesky (1996) studied music vibration in pain relief. According to Skille (1989) and Skille and Wigram (1995, p. 39) low-back pains have been reduced by the use of 52 Hz frequency. Accordingly 68Hz has been effective with neck and shoulder pains. Physioacoustic treatment has also been used to decrease the pain of knee replacement patients (Burke & Thomas, 1997) and post-operative gynecological patients (Burke, 1997). Walters (1996) also studied the psy-

chological and physiological effects of vibrotactile stimulation, via Somatron, on patients awaiting scheduled gynecological surgery. 52Hz has also been used for menstrual pains and symenorea with good results (Skille, 1989; Skille & Wigram, 1995 p. 39). According to Skille, Wigram and Weekes (1989), Skille (1989), and Skille & Wigram, (1995) low frequency sound waves are reported to relieve pain and to reduce the length of the rehabilitation period when treating sports injuries, such as acute muscle traumas or post-operative convalescences. This year at the LCMTR we conducted a sports injury research (Tiidus, Markoulakis, Murray, Bryden, Ahonen-Eerikainen, 2007) in collaboration with Marco Kärkkäinen in which we used frequencies between 40 Hz and 60Hz. Dr. Peter Tiidus introduces the Results of this study in his article in this newsletter.

50 Hz has been releasing lung secretions in patients with cystic fibrosis, bronchiectasis and chest infections (Skille, Wigram & Weekes, 1989, p. 6-10; Skille & Wigram, 1995, p. 38). There are also several reports that show relief of symptoms in patients suffering from pulmonary emphysema when using 40 Hz and 50 Hz frequencies. 50Hz frequency is effective with asthma symptoms. (Skille, 1989; Skille & Wigram, 1995, p. 39). This year we are planning to start a project in collaboration with Voice Department, Music Therapy and Kinesiology at the LCMTR.

According to Butler and Butler (1997) Physioacoustic treatment is effective with cardiac patients. There was also significant result in the reduction of systolic blood pressure after vibroacoustic therapy when using 40 Hz and 60 Hz frequencies (Skille & Wigram 1995, p. 45-49; Skille & Bronstad, 1988-89, cited in Skille & Wigram, 1995, p. 49-52). Similar results were reported in Finland at the University Hospital of Kuopio when using physioacoustic chairs. 40 Hz and 50Hz have been successful treating patients suffering circulatory deficiency. There were also good results with institutionalized patients with oedema (Skille & Wigram, 1995, p. 40, 44). 40Hz has also been helping the digestive system (Skille, 1989; Skille & Wigram, 1995).

40 Hz has been used for insomnia (Skille, 1989; Skille, Wigram & Weeks, 1989; Skille & Wigram, 1995, p. 40). There is some evidence that 52-68Hz helps clients with anxiety (Skille and Wigram, 1995). Hooper and Lindsay, (1997) used the Somatron in the treatment of anxiety with clients with learning disabilities. Naukkarinen, Lehtikoinen, Paakkari and Saikkonen (1990) were using the physioacoustic method in the treatment of the psychic anxiety. At the Tallinn Pedagogical University in Estonia, vibroacoustic relaxation has been part of the university health care. The research results show good results using music, vibroacoustic and counseling to treat stress (Ruutel, 2002). 40 Hz and 68Hz also seem to help for stress induced depression (Skille, 1989, Skille & Wigram, 1995, p. 39; Ala-Ruona, 2003). In Finland i.e. Sibelius Academy and KANSKA insurance company used the physioacoustic chairs as part of their employee health care and stress release program (Lehtikoinen, 1996; Paju, 2003).

In this newsletter Dr. Ulla Hairo-Lax will introduce her Doctoral dissertation results of using Physioacoustic treatment with alcoholic addicted (Hairo, 2003, p.194-212). In Finland Physioacoustic therapy has also been widely used in treatments of substance addicted (i.e. Punkanen, 2003, p. 214-246). Erkkilä (2003) describes in his study of using Physioacoustic method in the treatment of gambling addiction. Music psychotherapeutic Psychoauditive method (PAM) combines low frequency sound wave treatment and therapeutic music listening (Ahonen-Eerikainen, 1996). The gentle and relaxing low frequency massage during imaginal music listening sharpens the body sensations. Expressing body sensations can lead to an expression of feelings. The next phase is improvising about body sensations, expressing and communicating about them: "This is how my back pain would sound," "This is how my neck tension would sound," etc. The Psychoauditive Method works well with people who have problems expressing their feelings, e.g., clients with alexitymia or psychosomatic symptoms. It is sometimes easier to discuss body sensations first, then feelings, emotions, and issues surrounding them.

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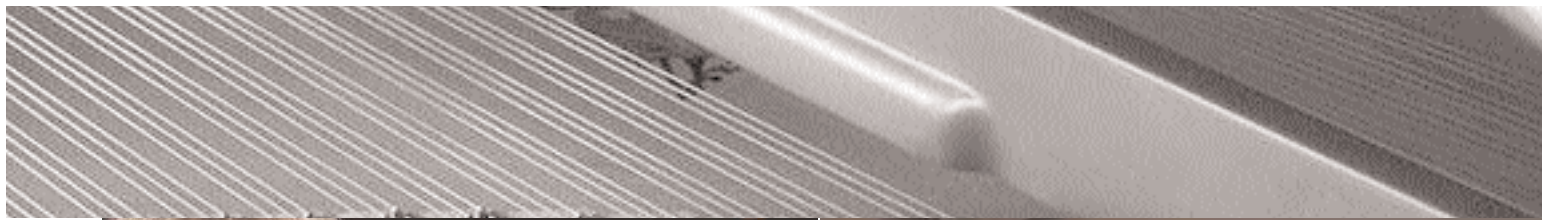
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20th Anniversary Celebration with Friends and Colleagues...

Dr. Rosemary Fischer came to Wilfrid Laurier University from East Carolina University in 1986 to start a Bachelor of Music Therapy program. That was 20 years ago!

On Friday, February 16, 2007, we celebrated our 20th Anniversary with Dr. Rosemary Fischer, faculty, graduates, students, friends and clients. This was a wonderful event with 109 people present. A number of speeches with laughter and tears, music and mingling. Great food and socializing.







Short-term Influences of the Physioacoustic Method on Symptoms in Parkinson's Disease

By Dr. Quincy Almeida & Lauren King

Movement Disorders Research & Rehabilitation Research Centre & LCMTR

Wilfrid Laurier University

Our objective was to complete a thorough, quantitative analysis of the effectiveness of whole body vibration as a potential treatment for motor symptoms of Parkinson's Disease. Although previous investigations have supported the idea that vibration therapy is an effective mode of symptom relief, the thoroughness in gait and functional upper limb assessments of the current study is unmatched.

40 individuals diagnosed with idiopathic Parkinson's disease participated in this study with their informed consent. Participants were subdivided into groups according to primary symptom. Hence, there were 20 slow/rigid dominant participants, and 20 tremor dominant participants. The mean (\pm standard deviation) age was 65.4 ± 9.9 years, and the mean duration of the disease was 6.8 ± 4.8 years. Diagnosis was established by the primary care neurologist. Participants with dementia or other diseases impairing gait or coordination were not admitted to the study, and all subjects had normal or corrected-to-normal vision. To represent their typical day-to-day state, subjects were not withdrawn from their medication. Vibration treatments were administered in 5 series lasting one minute each with one minute rest periods between each series.

When sitting in the chair, participants were instructed to close their eyes and relax as much as possible with their legs reclined and uncrossed. Lower legs, thighs, buttocks, lower back, and upper back were to be in contact with the surface of the chair at all times.

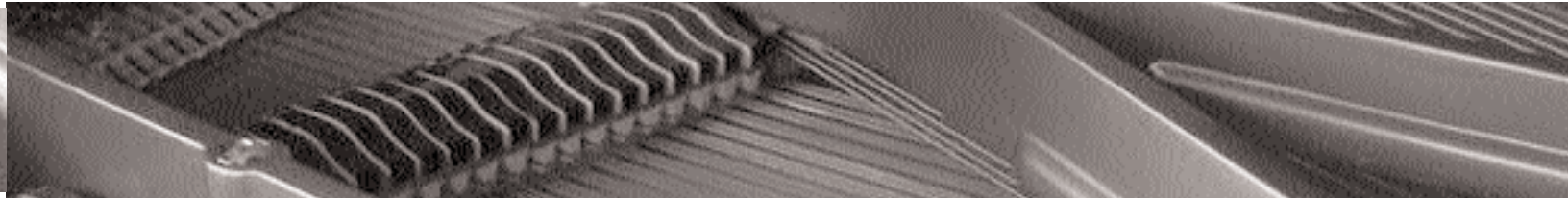
Participants were first assessed using the motor section of the Unified Parkinson's Disease Rating Scale (UPDRS). The UPDRS is a standardized diagnostic tool that gauges the nature of the disease progression and effectiveness of treatment plan. Videotaping the assessments allowed the rater to be completely blinded to the treatment status of each participant, with no cues as to which experimental group the individual belonged. For the videotaped assessment, participants were rated for tremor, finger tapping, leg agility, posture, and ability to arise from a seated position. The only subset that could not be rated with videotapes was the rigidity component which was also completed by the same blinded rater for each assessment. Also, each participant was required to walk in a straight line at a normal pace down a pressure-sensitive carpet that measured several parameters regarding the gait of the individual. The measures of interest were velocity and step length for both right and left feet. The second final assessment was the timing in a grooved pegboard task to indicate the severity of slowness in execution of movement. This grooved pegboard is a manipulative dexterity test consisting of 25 holes with randomly positioned key-hole slots, in which participants have to place 25 pegs. The experimental design we employed allowed us to counterbalance the effects of fatigue and practice in our assessments, and also determined if there was a difference between vibrating in the chair and simply sitting in the chair.

In summarizing the results, no major symptom category is left untouched. UPDRS scores for tremor and rigidity both improved. The other subsets of the UPDRS scales namely posture, sitting to standing scores, and leg agility did not reach a level of significant improvement. However, this is likely due the fact that these scores were naturally less severe initially. Therefore, unlike tremor and rigidity, there was little room for improvement in the first place. The GAITRite carpet was able to provide the study with accurate and unbiased parameters indicating the improvement in step length but no significant change in velocity. Results of this initial investigation provide support for vibration therapy as a non-pharmacological treatment alternative. Long-term effects of vibration therapy would require further research.

Physio-acoustic therapy and placebo effect in muscle recovery.

By Dr. Peter M. Tiidus, Roula Markoulakis, Drew Murray, Marco Karkkainen and Dr. Heidi Ahonen-Eerikainen.

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Physio-acoustic therapy and placebo effect in muscle recovery

Peter M. Tiidus, Roula Markoulakis, Drew Murray, Marco Karkkainen and Heidi Ahonen-Eerikainen

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Physio-acoustic therapy has been advocated as an effective means of enhancing muscle recovery following intense physical activity. When muscles are overused or exposed to unaccustomed activities or very intense exercise or sport, small micro-trauma can occur to muscle micro-structures. This will result in a sustained period of diminished ability to produce maximum force and may also result in feelings of muscle soreness and stiffness due primarily to repair related muscle inflammation. The use of physio-acoustic therapy has been advocated for athletes seeking to enhance performance recovery between competitions and for other active individuals who may experience muscle soreness following heavy physical work or activity. This initial study sought to assess the effectiveness (or lack thereof) of physio-acoustic therapy in enhancing recovery of indices of muscle damage following a standard bout of unaccustomed muscular activity.

Young, healthy male and female adults were randomly assigned to one of three groups: control, placebo, or treatment. All groups were asked to perform a series of maximum effort eccentric (lengthening) triceps muscle contractions using an isokinetic CYBEX NORM apparatus. This exercise was followed by either no treatment (control), sham physio-acoustic treatment (placebo) (with the chairs turned off and the subjects lead to believe that treatment was occurring), or actual physio-acoustic treatment (treatment), using a progressive physio-acoustic treatment regimen lasting 30 minutes. Both placebo and treatment groups were exposed to the physio-acoustic chairs (with chairs either turned off or functioning) on days 1, 2, 3 & 4 post-exercise. Measures of triceps muscle soreness and rates of strength loss (as isometric and concentric isokinetic forces) and regain (as indices of muscle damage and recovery) were made prior to the eccentric exercise (to establish baseline) and then on days 1, 2, 3, 4 & 7 following exercise (recovery).

Ability to generate muscle force was depressed in all groups on days 1-3 and had returned to pre-exercise values by days 4-7 in both the placebo and treatment groups. The ability to generate muscle force in the control group was slower to recovery and had not yet returned to baseline by 7 days post-exercise. Muscle soreness was also elevated in all groups on days 1-2 post-exercise. Placebo and treatment groups both reported no more muscle soreness by day 3 post-exercise while the control group continued to report muscle soreness though days 3-4 post-exercise.

It was concluded that while the physio-acoustic treatment appeared to enhance the recovery of indices of muscle damage faster than what occurred with non-treated control subjects, the rate of recovery induced by physio-acoustic treatment was no different from the enhanced recovery rate seen in the placebo treatment group. Hence the success of physio-acoustic therapy in improving the rate of post-exercise muscle recovery can in this instance be attributed primarily to a placebo effect.

Veli J Ylanko Lic.Med.(Fin), L.M.C.C., C.C.F.P., F.C.F.P

**Family Physician
Assistant Professor (retired) Dept. of Family and Community Medicine
Univ. of Toronto**

Physioacoustic chair, personal experience

As the fancy list letters after my name indicates, I am a General Practitioner, trained in Finland, then moved to Canada, got extra training to become Certified Family Physician in Canada. Here I worked as an assistant Professor in the Department of Family and Community Medicine of the University of Toronto until my mandatory retirement at the age of 65 years.

I consider this information important, because it positions me in the group of critics, if not cynics in the academia, always alert and suspicious when new therapeutic modalities are introduced.

I am married; I have three children and ten grandchildren. My wife is a retired school teacher, also trained in Finland. After our move to Canada she worked as the principal on the Toronto Finnish Language School as well as the founding President of the Finnish Language Teachers Association of Canada.

As you can see, we both have academic background and we both feel that we are not easily taken for a ride with some new and fancy treatment, let alone by a vibrating chair.

During the past several months my wife has developed mobility disorder with many – but not all – features of Parkinson's disease. She has been treated by a neurologist who has put her on full anti-Parkinsonian pharmacological regimen.

As a physician I am in agreement with her Family Physician that the choice was correct and that some positive signs of the effects of medication have been noted.

Recently Professor Heidi Ahonen-Eerikainen introduced us to her import from Finland, a Physioacoustic Chair with computer and sound equipment, presently located in the Finnish-Canadian Seniors' Centre in Toronto.

Since the system appeared to be safe and we had nothing to lose, I suggested to my wife that we should try the system. This trial has lasted now for almost one hundred sessions, each ca. 30 min in duration. In other words, over 3000 minutes, 50 hours of Physioacoustic shaking. First set of treatments were from the list for programs from the computer, mainly "stress" module, with some manual addition at the end. These were programmed by me, without any appropriate training as was the next set of treatments. Now for the past few weeks, we have been using programs that Prof. Ahonen-Eerikainen has designed specifically for my wife. For the background music we have chosen selections from our own CD collection. We have noted, that the client-specific programs have been "stronger" and the preliminary impression is very favorable, better than the old self made programs. We will continue the observation of the long term effects of this new and exciting treatment modality. I have informed our Neurologist about the use of this new therapeutic modality and his response has been predictable: polite smile and "let's see" attitude.

Has the treatment been effective in our case?

Yes, I think so. At least my wife's walking from the treatment room appears to be more fluid than her walking into the room.

As is the case in all anecdotal reports, there is no possibility of provide controls or to make any statistical analyses. According to the information Professor Ahonen-Eerikainen has provided, there are several large projects underway in various parts of the world, mainly in Finland and in Scandinavia with a goal to outline the effect of Physioacoustic treatment in Parkinson's Disease.

As I am now waiting with interest the results of these projects, since I am more interested of the mode of action of this new treatment modality. My general approach of any new treatment modality the Pharmaceutical industry provides has always been the same: I try to find how it works and then apply that knowledge to the treatment of patients in my practice. This has led to some off-label prescribing, but more often than not the science has agreed with me eventually and approved my choices as official indications.

I am now trying to implement the same approach to the Physioacoustic Chair but thus far I must admit, that I have not understood and internalized its effect on human body – there are positive reports, most of them anecdotal. (see: www.soundwavetherapy.co.uk/about-us.htm) I have been told that more results are forthcoming and I am waiting with unabated interest.

In the meantime, we are continuing to use the "magical chair" several times weekly. At least I have not seen any harm from it.



THE PHYSIOACOUSTIC METHOD AND TREATMENT: SPECIALIZATION TRAINING IN LOW FREQUENCY SOUND TREATMENT IN FINLAND

Marko Punkanen & Esa Ala-Ruona

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The low frequency sinusoidal sound vibration based Physioacoustic method has been part of Finnish music therapy practice for over 25 years. However the comprehensive training for theoretical issues and clinical applications of the method has only been available since the fall of 2005 when the first training course started in Eino Roiha Institute in Jyväskylä, Finland. The training is the equivalent of 12 ECTS credits and consists of seven intensive study weekends. The authors of this article are the developers and main trainers on the training programme and the other trainers are professionals who use the Physioacoustic method in their clinical practice with different client populations (e.g. within the examination for rehabilitation and treatment, addiction problems and psychiatry).

Background of the Physioacoustic training

The planning of this training started in 2003 at the seminar of the Finnish Society for Music Therapy where the Physioacoustic method and treatment was the main topic. Considering the extent of the use of the Physioacoustic method in Finland, there have only been short training courses available to date, mainly within the training of music therapists. During the seminar there was lots of discussion about the need to establish specific and more formal training in low frequency sound treatment. The systematic planning of the training started immediately after the seminar and in the fall of 2005 the first training course started with sixteen clinicians in the Eino Roiha Institute.

Content of the training

The content of the training is divided into eight sections which are:

- Basics of low frequency sound therapy
- Introduction to different methods of low frequency sound therapy (physioacoustic method, vibroacoustic therapy, Somatron, Music Vibration Table)
- Basics and possibilities of Physioacoustic devices, editing and creating the treatment programs and the fundamental elements and different strategies in treatment sessions
- Interaction and building the therapeutic relationship with client (also practical demonstrations and learning-by-doing exercises with real time observation)
- Body awareness as a tool for therapist and client
- Opportunities for using music in Physioacoustic treatment
- Supervision and clinical practice
- Written case report

Each section includes a specialized bibliography of related literature and suggested additional readings:

- Students' clinical practice based case reports
- Students can choose one or two therapy processes which they report to others based on their clinical interest. During this process they learn how to conduct the systematic assessment and documentation, create treatment procedures and plan the treatment, evaluate the treatment and make recommendations for follow-up treatment. Learning to document and use different evaluation forms is also an important part of this learning process.

Here are some examples from the students' case reports:

- Physioacoustic treatment as a method for alleviating pain and muscle stiffness caused by MS-disease
- Initial assessment of a depressive client by using the Physioacoustic method
- Physioacoustic treatment as a method for alleviating acute menstrual pain
- The Physioacoustic method in the treatment of insomnia
- Physioacoustic treatment combined with individual verbal therapy sessions with substance abuse patients
- The effect of Physioacoustic waterbed on patients with multiple handicaps who have high muscle tone and spasticity
- Restless Legs Syndrome (RLS) and Physioacoustic treatment
- Physioacoustic treatment as a method for alleviating symptoms of fibromyalgia
- The Physioacoustic method as a part of treatment in an acute psychiatry ward

During clinical practices students have noticed many positive effects of physioacoustic treatment; long lasting insomnia or pain diminish(ed) or totally disappear during treatment series and clear improvement in the client's quality of life to name a few. In comparable clinical practices new questions emerged and an apparent need for further scientific research on the effects of certain elements of the methods using low frequency sound vibration became evident, especially when studying the overall effectiveness of physioacoustic treatment in the care and rehabilitation of various client groups with different needs.

Conclusion

The aims of the training were to give skills to students for systematic use of physioacoustic treatment, produce new knowledge about the possibilities of the method and deepen theoretical knowledge about the subject. Additionally we wanted to direct students' attention to the wholeness of the treatment process including all the elements (PA-method, music, interaction, space, treatment strategies, procedures, etc.) and give them personal experiences both in the role of client and as a therapist. After two completed intensive training courses and collected feedback from students, we are happy to say that the aims we set have been reached satisfactorily. Our current challenge is how to develop different ways of supporting the network of trained clinicians and utilizing their clinical experiences as a basis for the development of cumulative knowledge. We are also planning to have shorter intensive follow-up courses in the future for our "old" students. These courses may cover more specific topics in greater depth and detail.

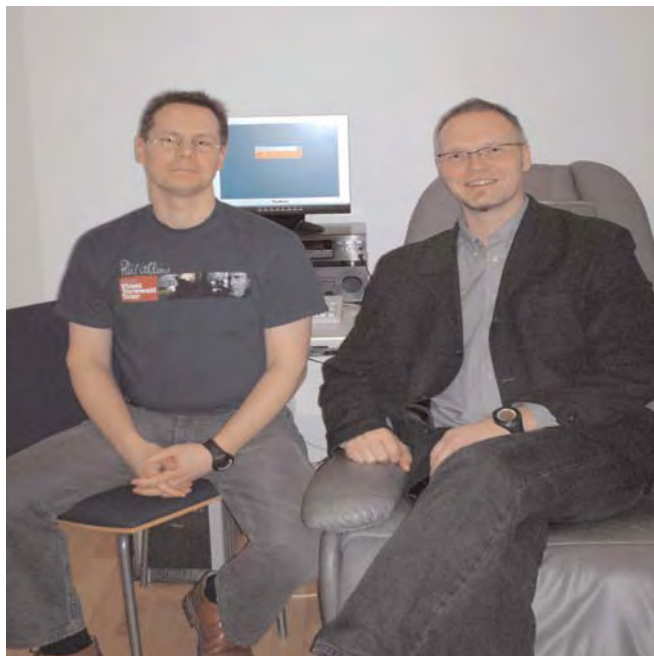
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Marko Punkanen is a researcher, music therapist, trainer and clinical supervisor. He currently works as a music therapy researcher at the University of Jyväskylä. In addition he runs a private music therapy practice in Lahti and works as a Music Therapy and Dance/Movement Therapy trainer. He also has an ongoing PhD research project on Music Psychotherapy. His special interest is in trauma related psychiatric problems, addiction problems and in music psychotherapy practices.

Email: marko@nyanssi.net Esa Ala-Ruona is a music therapist, trainer and clinical supervisor. He has worked as a music therapist for 20 years within the field of psychiatry and at present works as a senior assistant, trainer and lecturer on the MA program of Music Therapy at the University of Jyväskylä. He is finishing his PhD research project on initial assessment of psychiatric clients in music therapy. Other areas of interest include processes in music therapy and the development of music therapy and music psychotherapy methods and training.

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Picture 1: Authors Marko Punkanen (left) and Esa Ala-Ruona with the Physioacoustic chair



Picture 2: Students in practical learning-by-doing exercises



Picture 3: Students learning to edit and create the treatment programs

Some thoughts on the early pathways of Vibroacoustic therapy research and clinical applications

By Dr. Tony Wigram



My introduction to Vibroacoustic Therapy began at the World Conference of Music Therapy in Genova, Italy, where I met an unusual Norwegian special educator and musician called Olav Skille, who had been exploring the physical effects of low frequency sound and music. I had been working for several years in a large long-stay hospital for people with severe learning disability and multiple handicaps, using music primarily as an active and interactive tool within the improvisational model of music therapy typical in Europe. Vibroacoustic therapy seemed a long way away from this model, but due to ongoing work with physiotherapists, I was very conscious of the value of music in promoting relaxation, and improving range of movement in people with physical disabilities.

Arising out of the early empirical work, and the subsequent research, the combination of low frequency sound vibration used together with different forms of music was seen as a new approach with potential for a wide field of application once efficacy and effectiveness could be demonstrated. Current practice following such research shows that. VA therapy is a systematic form of intervention that requires a therapeutic relationship between therapist and patient, and involves musical experiences. It therefore meets criteria defined by Bruscia (1998) to be categorized as a form of music therapy. Comprehensive reviews describing the equipment to be used, treatment indications and contraindications and collected clinical reports and research studies can be found in Hooper (2001), Wigram (1996, 1997b) and Wigram & Dileo (1997a, 1997b). The anecdotal results from empirical investigations in the early to middle 1980's led to a series of experimental studies that I undertook for doctoral study with both the clinical and non-clinical population. These studies were founded on assumptions, clinical experiences and anecdotal reports or research findings previously documented in the field of vibroacoustics (Chesky & Michel, 1991; Chesky, 1992; Lehtikoinen, 1988; Madsen, Standley & Gregory, 1991; Skille, 1982, 1986, 1989a, 1989b, 1992; Skille & Wigram, 1995; Wigram, 1993, 1995). Table 1 shows the sequence of studies that were undertaken in order, defining the area of investigation, the subjects that were involved in the study and briefly, the method that was used.

Table 1: Six experimental studies in VA therapy with clinical and non-clinical subjects n = Research focus and method

- | | n | Research focus and method |
|---|----|--|
| 1 | 10 | A study investigating reduction in muscle tone, blood pressure and heart rate in patients with high muscle tone, quadriplegic cerebral palsy and severe learning difficulties. Comparison of treatment with placebo conditions in a within subjects, repeated measures design. |
| 2 | 27 | A follow-up study investigating reduction in muscle tone, blood pressure and heart rate in patients with high muscle tone, quadriplegic cerebral palsy and severe learning difficulties. Comparison of treatment with placebo and control conditions in a within subjects, repeated measures design. |
| 3 | 39 | A study investigating non-clinical subjects reported perception of a sensation of vibration in their bodies when presented with 10 different low frequency tones between 20Hz – 70Hz. |
| 4 | 52 | A follow-up study investigating non-clinical subjects reported perception of a sensation of vibration in their bodies when presented with 20 different low frequency tones between 20Hz – 70Hz. |
| 5 | 60 | A study investigating changes in non-clinical subjects level of arousal, heart-rate and blood pressure to VA therapy when compared with a placebo and control conditions, employing a between groups design. |

In the field of music and medicine, music has a long history of usage in medical procedures (Spintge, 1982; Spintge & Droh, 1982 Standley, 1995) and evidence had been presented documenting reductions in pain (Chesky & Michel, 1991; Curtis, 1986), stress (Maranto, 1994), and to meet emotional needs (Bonnie, 1976; Clark, 1991; Goldberg, 1995).

The anecdotal evidence from Skille's clinical trials had reported a variety of beneficial effects on muscle-tone, heartrate and general well-being (Skille, 1989). He documented a number of reports on his clinical experiences with a wide variety of mental and physical disabilities or disorders. As well as the studies I undertook listed above in table 1 that were aimed primarily at the multiply handicapped population to achieve physically relaxing effects on children and adolescents with high muscle tone and severe spasticity, Skille had offered anecdotal reports suggesting the effects of VA therapy on people with pulmonary disorders such as asthma, cystic fibrosis, pulmonary emphysema, general physical ailments such as ulcers, poor circulation and post-operative convalescence and even psychological disorders with somatic effects such as insomnia, anxiety, self-injurious behaviour, autism, depression and stress (Skille, 1992).

The theoretical foundation for research into the effects of music vibration and sound vibration is underpinned by the more general research on the effects of vibration, low frequency sound and infrasound. Much of the research studies documented work exploring the physical effects of vibration (Berglund & Berglund, 1970); Hagbarth & Eklund, 1966); (Wedell & Cummings, 1938). Specific applications of vibration for its use as a tool in physiotherapy were underpinned by the work of Stillman (1970) who advocated the use of vibratory motor simulation and promoted the development of vibratory massage. This was further developed by Carrington (1980) and Boakes (1990) in both the fields of physiotherapy and occupational therapy. Boakes looked in particular at the effects on muscle physiology via muscle receptors and advocated that vibration within the range of 20Hz-50Hz causes an inhibition of muscle impulses, so inducing muscles with degrees of spasticity to relax.

Vibroacoustic therapy seems still to be in an embryo stage of development, despite the respectable body of direct and related research. This form of treatment is remarkably economic and free from side effects, yet the consistency of its effect requires further investigation. Nevertheless, there has been a poor uptake of its value as a clinical intervention. Airports, health clubs and shopping centers now offer an array of vibrating chairs and couches for 'relaxation'. It is often found to be consistently effective, and at the hospital where I worked and researched, a vibroacoustic centre with a team of clinicians was established following the results of the studies listed above. Of course, I was in a positioning the early 1990's to advocate this, and to develop this centre. My closing comment for this short introduction is to remind all colleagues in the field of music therapy that our methods of intervention include live music making, composition, and receptive methods, and to recall a comment Juliette Alvin made on the 1982 BBC 2 programme on Music as Therapy that she "...had to learn physiology – and that is not romantic or emotional, but you can't have the emotional effect of music without the physical effect....". We mustn't underestimate the physical value of music vibration.

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Brainstem responses to music and vibroacoustic stimulation: an ongoing study

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Dr. Peter Julu and the EEG technician Flora Apartopoulous



The woman connected to the monitoring system

The equipment

This article will describe an ongoing study about how persons with Rett syndrome (RTT) respond to different musical stimuli. Earlier clinical research (Merker, Bergstrom-Isacson, & Witt Engerstrom, 2001) describes the importance of music amongst persons with RTT and in some cases parents and carers even talk about how they use music as some kind of "medicine" or "first aid".

In my own work with persons with Rett syndrome I have used vibroacoustic therapy (VT) as one therapeutic method and observed how anxiety is subdued and body tension decreases. Hand movements are calmed, breathing becomes deeper and more normalised. VT is used as a method and relies on the use of low frequency sound. These tones influence the body while sitting or lying in a chair or bed with built in loudspeakers.

Sound waves are movement and they transport their movement to the mass that is exposed to their sound. In this case the body. The low frequency sounds have slow oscillations, which make it easier for us to feel or experience them in our body. Different frequencies are felt in different parts of the body. Earlier research has shown a noticeable relaxing effect on the body (Wigram & Dileo, 1997) and calmer breathing but there is no research that clarifies any possible physiological background mechanisms.

Rett Syndrome (RTT) is a neurodevelopmental disorder that is found all over the world and the syndrome affects basic human functions among others communication, praxis movement and intellectual functions. Nutritional difficulties, autonomous dysfunction with breathing and peripheral circulation disturbance, epilepsy and severe scoliosis are often observed.

RTT affects mainly girls, however there are some boys, and mutations of a regulatory gene (MECP2) cause disruptions of the normal growth of neurons in the central nervous system (Kerr & Witt Engerström, 2001)

Children with RTT have an apparently normal development through the first period of life. Around 9 months a delay in development appears and by the end of the first year of infancy a girl developing RTT is clearly falling behind (Trevarthen & Burford, 2001). It is important to note that RTT is a developmental disorder and not a progressive degenerative disorder. Persons with RTT have abilities to retrain and to learn new things all through life.

During twenty years of clinical and neurological research in Sweden and Great Britain all examined persons with RTT have shown to have abnormalities in body control functions, e.g. disturbance in the brainstems automatic functions. This extraordinarily serious and unusual disturbance permeates the complex of problems according to RTT. This may also be one reason behind the cases of unexpected and sudden death (Glaze & Schulz, 2001; Trevarthen & Burford, 2001).

At the Swedish Rett Center there has since 1998, been an opportunity to study the control of the autonomic nervous system in the brainstem with the help of a technique invented by Julu (Julu et al., 2001).

Based on my own observations and parents or carers' description, I have become curious regarding different responses to music and vibration. In my C-Essay I worked with a psychological comprehension model and interpretation that regarded similar questions of issue (Bergström-Isacsson, 2001; Merker et al., 2001). In my D-Essay Master's Thesis I have explained the possibilities of measuring the effects on the brainstem of music and VT (Bergstrom-Isacsson, 2005; Bergstrom-Isacsson, Julu, & Witt Engerstrom, 2007) and I am now wishing to delve deeper into that subject and compare possible differences between an immature and a normal brainstem.

This will be done by studying the central nervous system functions at contemporaneous brainstem examination on persons referred to Rett Center and a specially recruited comparison group with normally developed children. All subjects will be exposed to randomly selected music and VT of specific character.

The main reason for the study is the knowledge that brainstem disturbances cause major problems to persons with Rett disorder. If the use of music and or VT can somehow help or strengthen the brainstem control function this would be of great importance for the individual.

The medical care for these persons is very costly and new more helpful methods could also reduce costs. If music or VT can be used as a complement or instead of pharmacological treatment according to reduce anxiety, screaming, sleeping difficulties, etc., it can benefit both the individual and the total medical care.

Another reason for the study is the gap of knowledge in this area. In the literature there is a great deal of documentation about the importance of music amongst persons with RTT. As early as 1966 Andreas Rett (Rett, 1966) has written about it and one small study about brainstem responses has been done earlier (Bergström-Isacsson et al., 2007) but this study will more closely examine the phenomenon.

Clinical observations from the Swedish Rett Center state that VT together with relaxing music generally makes persons with RTT achieve a relaxed status. Observations such as reduced abnormal breathing (for example hyperventilation and bloating), a decrease of stereotyped movements and relaxation in the whole body can be seen in a VT session. The VT sessions are video recorded, notes are taken and the results are then discussed in the interdisciplinary team. The equipment at Rett Center is a music bed from the company Kom i Kapp, with two large loudspeakers in the frame of the bed. The speakers are positioned right under the back and under the knees. On top of the bed-frame there is a mouldable cushion on which on where the client lies. The Center also has a bean-sack with a built-in loudspeaker that can be used if the person does not want to lay down for some reason. The sack is from the same company as the bed. Low frequency sound is played in the bed/sack and an external CD player plays relaxing music. Earlier a water mattress was used but experience showed that a water mattress is unstable and sometimes caused fear and therefore a more firm mattress is preferable.

From my own clinical observations and from research done in this area several questions arise. How, and if in that case, why is VT working as a relaxing method for persons with RTT? Is it the vibrations, the music or the combination that have effect? What kind of music is calming and what kind is stimulating? Are there any differences between normally developed persons and persons with RTT?

The following research questions lead to the hypotheses:

1. What effects have the six stimuli on persons with Rett Syndrome?
2. What effects have the six stimuli on children 1-5 years with a normally developed brainstem?
3. Is it possible to observe any differences in response between the two groups?

Hypotheses:

These, for this article simplified, hypotheses are formulated to investigate the responses in persons with RTT within subjects and every stimulus are compared to the most consistent baseline measure elicited during the trial of normal breathing, blood gases within normal range, awake state and without epileptic activity.

The following hypotheses are also formulated to compare responses between RTT and normal children between 1-5 years old and I expected that similar responses can be observed both in persons with RTT and in normal children. This will prove or disprove my theory of a normal musical development according to RTT.

1. A piece of unknown, and for this purpose, a specially chosen music causes an arousal response.
2. Activating music causes a sympathetic response (an activating response).
3. Calming music causes a parasympathetic response (a relaxing response).
4. VT causes a parasympathetic response (a relaxing response).
5. VT combined with a specially chosen piece of music causes a parasympathetic response (a relaxing response).
6. The music without VT that is played in the combination of VT and music causes a parasympathetic (a relaxing response).

Method

The aim of this study is to investigate the emotional output in response to music and vibroacoustic therapy in Rett persons who are referred to the Swedish National Rett Centre over a period of two years in comparison to a group of ten normally developed children 1-5 years old. It is also to investigate if the preliminary observations from an earlier study are reproducible in the Rett population but in a different group. The hypotheses of this investigation have been formulated by Julu on the basis that emotional output would influence the brainstem autonomic activity in the following manner. First: Emotional excitement will increase brainstem sympathetic activity above the resting baseline level. Second: Relaxing or calming emotional response will increase brainstem parasympathetic activity above the resting baseline level. Third: Arousal response without evoking a relaxed or excitement state will only cause physiological arousal measurable in the brainstem autonomic activity (Bergström-Isacsson et al., 2007).

Because of the laboratory like the situation, how the study is done and the kind of measurable data collected (baseline and six independent variables) I've found that a quantitative approach and a within subject study is the most suitable (Prickett, 2005).

Design

This experimental study has been designed as a within subject study also called a repeated measure design, which means that the same person is used both as control and test and each subject will be provided all conditions of the experiment. The subjects in the study were randomized to the extent that the order of the stimuli they received was randomly assigned. Subjects inevitably differ from one another. It is simply a fact of life that subjects differ greatly. In between-subject designs these differences among subjects are uncontrolled and are treated as error. In within-subject designs, the same subjects are tested in each condition. Therefore, differences among subjects can be measured and separated from error.

To calculate the effect size for this study I have used Power and Precision, ANOVA.

Alpha is 0.05 and within an assumed $R^2 = 0.36$ ($r = 0,6$). I aimed to find out the required sample size for 80% power. The result showed that 23 subjects would be needed. This calculation was based on parallel design (23n/group) were as in this study there was a within subject design.

The study data is collected during the approximately one hour the person is exposed to a registration of basic functions; the brainstems control function of the autonomic nervous system. The control situation is the person's own baseline which is measured when the person is; resting, breathing normally, awake and no epileptic activity can be seen on the EEG. We look at a homogeneous group as far as the neuronal maturity is concerned (Armstrong & Kinney, 2001). The collected information is basically the collaboration between the brainstem and the heart which indicates how the heart is controlling the pulse and the blood pressure and with which pressure the heart is working. These measurements and calculations give information about the brainstem maturity and how well the brainstem controls the sympathetic and the parasympathetic system when a person is resting as well as when she/he is exposed to the different musical stimuli.

We are describing our stimuli using terms such as: activating, calming or favourite music based on the authors', parents' and carers' descriptions of the subjects' behaviours towards their favourite tunes. We have a total of six stimuli applied consecutively to each subject in this study:

Activating music - this is music chosen by the parents or carers, and I expect a sympathetic response. Generally this music has an up-tempo beat, a catchy and clear refrain, lyrics, repeats and clear rhythms. This kind of music can provide responses such as smiling, body movement, increased breathing rate, rising of body and increased contact.

Calming music - this is also music chosen by the parents or carers and I expect a parasympathetic response. This is usually music with low beat with a general perception of physical nearness, climbing towards refrain (expectancy), soft lyrics and a supportive basic rhythm. This kind of music can provide responses such as calmness, concentration and a lack of movement.

Horn music - I expect an arousal response.

The initial concept of basic music stimulation is that we should be able to gather physiological arousal.

This music is an unknown piece of goat-horn-music chosen by a former colleague, Björn Merker. His explanation is that this piece of music is short, simple, and distinct at the start to make it very clear that the music begins. It includes a complete, musical sequence, and is a part of the girl's culture as well as being unknown for all the participants.

VT - I expect a parasympathetic response. 40Hz with a sinus curve with 5 seconds' duration and a peak of 89.4dB at the point where the person sits. This frequency is chosen from earlier studies and experience has shown that it is frequencies under 60Hz that is most effective for persons with RTT (Skille, 1991; Wigram & Dileo, 1997).

VT and Music - With VT 40 Hz combined with calm music I expect a higher parasympathetic response to compare to only VT.

The same frequency as above but added with music chosen by the music therapist. This is one way to examine if VT embedded in music increases the parasympathetic responses more than with only VT. It also gives information about the brainstem competence and as a result of that, an indication for further treatment, one stimulus at the time or two.

Music without VT - With this calm music without VT I expect a parasympathetic response. This music is the same as described above and the reason for using only the music is to clarify if any response to VT and Music depended on the music or on the combination.

All persons with RTT referred to the centre within the selected period were potential subjects for the study. To be a part of the study a person, female or male, must have been diagnosed as having Rett Syndrome before the referral to Rett Center and the brainstem examination. It was not necessary to have a gene test done because RTT still is a clinical diagnosis.

The parents were asked to bring one piece of music they interpret as activating, a piece of music that make the person happy, brake anxiety or a tantrum. They were also asked to bring a piece of music they believed had a calming effect. Not necessary relaxing but something the person really listens to and seems creates a moment of concentration, something that "touches". The choice of the girls' music is often a question of interpretation and this is not always easy.

The horn music, not previously a heard piece of music, was played for the subject while measurement was taking place. One of the stimuli for the subject is to be exposed to vibration only. Another one was to be exposed to the same vibration but in combination with calming (relaxing) music.

The last of the six stimuli was to expose the subject for the same calming music but this time without vibrations.

I will not go into the technical equipment or the details in this article because of its complexity and my aim for this article is rather to inform you all about my ongoing study. At this point I have collected my data and the next big step is to start the analysis process. Added to this I am planning to do video analysis of facial expressions connected to the brainstem responses and to analyse the used music.

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PHYSIOACOUSTIC METHOD SUPPORTING AN INTOXICANT-FREE WAY OF LIFE

- Therapy Clients` Experiences -

Ulla Hairo-Lax, PhD, Music therapist



The Physioacoustic Method uses low frequency sinusoidal sound to stimulate the whole body with sound vibrations (Lehikoinen 1996). Among other applications it has been used in music therapy for clients suffering from excessive gambling or drug and/or alcohol use. As a result of experiments and research in the last ten years (for example Erkkilä & Eerola 2001; Kärkkäinen 2005; Hairo 1996; Hairo-Lax 2005) Physioacoustic Method has become an established form of music therapy in rehabilitating a variety of addictions.

Without going further into theories connected to Physioacoustics stated earlier (see for example Kärkkäinen 2007), I will in this article focus specifically on the meanings that alcohol addicted clients gave to Physioacoustics in their therapy process. This article is based on my doctoral thesis which investigated alcohol addicted clients` experiences in music therapy, where Physioacoustic therapy was among the central methods used in the research groups.

RESEARCH PROJECT ON ALCOHOL ADDICTED CLIENTS` EXPERIENCES OF MUSIC THERAPY

I was interested in studying the music therapy process from the viewpoint of the client. I also wanted to proceed with the therapy experience from a holistic point of view, taking into account an alcohol addicted client`s personal life context. This was compatible with Lincoln`s and Guba`s naturalistic paradigm which I selected as the theoretical point of departure for my data oriented study (Lincoln & Guba, 1985). The analysis of the data suggested the importance of so called significant events as well as significant factors that supported an intoxicant-free way of life. The data, also used as a basis of this article, consists of 17 music therapy client interviews. I used a thematic interview method and analyzed the interviews based on a Grounded theory method (Strauss & Corbin 1990).

Participation in research groups was voluntary. The clients had decided themselves to seek help for their problems. Access to groups was allowed to anyone whose attachment to alcohol had grown to the point that it was causing distress, bewilderment and conflicts in life.

Twelve therapy groups were conducted by five therapists. Music therapy in research groups can be defined as either music-centered psychotherapy or music in psychotherapy (Bruscia 1998). The emphasis of the activity was on interaction between the therapist and group members. The therapy was carried out by verbal (therapeutic discussion) as well as sound-centered communication. The communication through musical sound was carried out by playing, improvising as well as other creative music making in a band. Other therapy methods included Physioacoustic Method and receptive music listening, where the clients responded to musical experience silently, verbally or by another modality such as movement or drawing.

The main clinical goals of the therapy were to evoke imagery, fantasies and affective states, and by doing so offer alternative experiences to the ones connected to substance abuse. The goals also included exploring the client`s own and peer group members` ideas and thoughts, facilitating memory and stimulating or relaxing a person. The therapy can be described predominantly as humanistic: The main objective was growth of the individual`s own developmental potential.

THERAPY CLIENTS` EXPERIENCES ON PHYSIOACOUSTIC METHOD

A computer controlled PA (Physioacoustic) system was installed in a chair. Each participant had their own treatment chair in group situations. Some clients had already familiarized themselves with the treatment chair earlier in detoxification, and in these cases their favourable experiences had motivated them to seek the PA again later in rehabilitation. For the most part, clients were positive about their experiences with the PA-system, even enthusiastic.

The PA-treatment engages all senses. It is simultaneously an auditory, tactile, kinesthetic and visual treatment. All of these sensory channels have their own importance in therapy as illustrated later in this article. The PA-treatment played varying roles in the therapy process for each participant: It helped to tune, heal and organize clients` bodies and minds.

Concrete tuner and organizer of the therapy session

The therapy clients came from different life situations. They may possibly have had a full day of events, not always pleasant ones. A very important function of the PA-chair was to tune a person for the session, gently help him/her to relax, calm down, empty his/her mind and concentrate on the day's subject. It also helped to re-establish the safe and trusting client-therapist relationship which had been built during the earlier therapy process. Most therapists, therefore, used PA-Method as a motivator in the beginning of a session.

Sometimes there were inevitable unexpected situations in the therapy groups. The breaking of routines caused confusion, lack of concentration and uneasiness among clients. This in turn underlined the necessity for consistent structure of the session, which was partly built with PA-treatment. PA's importance as organizer became most clear when the chair was for some reason unavailable. A client describes the situation:

Occasionally the chairs were occupied and we couldn't use them and so the group didn't function as well as when we started the session with the chair treatment...People became uneasy and I myself had also difficulties to concentrate because a certain routine had been broken.

Furthermore, PA-Method helped in forming a trusting environment in the therapy group. As a visual object the PA-chair was considered safe and familiar. It looked comfortable and could be touched. One could lie down on a chair and not do anything active for a moment. For many clients the PA-chair represented something concrete, in contrast to other abstract parts of the therapy like the music and mental work.

Physical effects

The PA-treatment engages tactile stimulation of the body (Lehikoinen 1998) which is very significant for substance abusers, since their bodies have more or less been over-stimulated by intoxicants. They have had little room to exercise physical well-being: The body "has forgotten" how to feel good. Symptoms which PA have been proven to combat effectively include pain, anxiety, depression, insomnia, high stress level or poor local blood circulation (Havio, Mattila, Sinnemäki ja Syysmeri 1994). When experiencing a pleasurable state, a person is more likely to become motivated to seek the state again. In a clients' own words:

It helps me, 'cause I've reached deadlock. Life feels like not being alive, 'cause I've become so deadlocked. And so... (because of the treatment) I get to remember how I used to be.

Some alcoholics had earlier noticed that time spent in detoxification was more or less waiting for the feeling of discomfort to disappear. The PA-treatment had already then helped them get momentary relief and bear the gradual disappearance of physical withdrawal symptoms more easily (see Hairo 1995).

As previously hypothesized in theories connected to PA, such as the theory of the activating endorfine production (Lehikoinen 1994) or the hypothesis of the mechanical stimulation of the GABA-cells (Kärkkäinen 2007), the treatment has pain relieving and relaxing effects. These theories were supported by some interviewees' statements:

It feels like - you know - that I have feet of my own. And that you to learn relax...get more out of your body.

Other reported effects of the treatment were reduced stress, and easement of emotional tension and subjective feelings of pain. There were also reports of improved quality of sleep and better ability to fall asleep

Learning to relax with PA improved clients' physical state. Gradually it was possible to recognize the sensations that different physical reactions would produce. Becoming aware of their physical condition as well as experiencing new reactions and sensations added to the clients' body awareness (see Rothschild 2000)

As described above, physical sensation experienced with PA were mostly pleasant ones. They produced positive thoughts and supported favourable body image. However, some clients experienced also unpleasant sensations which sometimes stimulated fragmented, traumatic thoughts. The sensations corresponded to Punkanen's (2003; 2006) notions of the disturbing body sensations and mentally surging emotions which are sometimes combined with irrational substance abuse. These reactions are part of the implicit memory and seem to have no connection to the situation in which they initially originated. Recognizing and treating these unpleasant sensations helped to integrate the material into clients' explicit memory on the cognitive level and thus reconstruct and integrate parts of the self. In the research groups further treatment was carried out by improvisation, working with visual arts techniques (painting, drawing) and most often by therapeutic discussion with the therapist or peer group members.

PA-Method combined with music fitting to the situation and to the theme of the session, created positive physical reactions and thoughts among clients:

-Music listening opens and freshens up your mind - and then there's this relaxation..

-It is a very useful form of treatment for people like me, for my mental health, stucked emotions and stressed and...it is well suited to refresh a person.

The PA-treatment activated numerous images in clients' minds derived from their individual lives. Often the treatment initially stimulated physical sensations, while vibrations also stimulated some emotional responses. These are common reactions to PA and have been suggested to be physiologically caused by mechanical activation of the nervous cells (Kärkkäinen 2007). The state of deep relaxation can be followed by altered state of the consciousness (Bonny 1975/1999; Lehtonen 1998). In addition to sound vibrations' tactile stimulus, some interviewees' associations were also stimulated by the treatment chair's own droning, surfy sound. Furthermore, selected music pieces aroused images and memories of both present and past experiences (for more see Lehtonen 1993).

The physiological, mental and emotional responses to the combination of different stimuli activated clients' conscious and subconscious minds altering in transitional states between them (Bonny 1975/1999). The participants were clearly very willing to share these reactions with the others. This gave the crucial necessary starting point to psychic work. The clients reacted by talking vividly of their experiences, writing vignettes, painting, drawing etcetera. One client tells about her stream of images:
It kinda' brought in mind something Indian. Something like as if you were in a bazar and there were those bells and that you walk there and the bells ring. Crazy these kind of associations, aren't they?

Another client's past life was brought to mind:

I went back to the past, to apartments I've lived in, one at a time, easily to the beginning of the sixties. I felt really good. I've never felt anything like that before.

For many alcoholics exploring emotions was an important opportunity which alcohol had previously facilitated. Alcohol had been used as a self object (see Granström & Kuoppasalmi 1998): With the help of it one had rinsed down feelings or gone through accelerated, intensive course of feelings as the clients themselves described.

Changes in the clients' well-being which were linked specifically to PA were diminished anxiety and depression. Moreover, higher spirits resulting from PA-treatment was reported. This positively influenced participants' mental health in general.

Sometimes the treatment evoked oppressive fantasies and memories. Clients felt challenged in dealing with these thoughts because of the overwhelming flood of emotional memories of anguish. One client tells:

I have quite a crazy imagination and I returned back to some old stuff. The feeling wasn't that good, instead rather oppressive, I would say. There were some amazing things I have no reason to remember: people's lines in certain situations and so on. Matters of the secondary importance... Luckily I could start from scratch again and let it go.

If the clients' ego structure is not strong enough, oppressive feelings may lead to regression and acting out, possibly even returning to substance abuse (Horesh 2003). In therapy such situations were seen as the kind of moments which need to be dealt with carefully. They were opportunities to discover and experience various aspects of the self. This was carried out by further therapeutic discussion and with some other techniques such as painting or musical improvisation. Recognizing and looking within at one's emotions and gradually learning to express oneself with the help of artistic means of expression gave a possibility to enhance emotional learning (see also Punkanen 2006; Eerola & Erkkilä 2001) which was one of the main goals in music therapy.

DISCUSSION

PA has multi-faceted possibilities in rehabilitating substance abusers. For example, when offering a positive and meaningful weekly programme, the music therapy with PA-Method worked for some clients as a regulator and supporter. Also the growth of personal resources manifested itself in better life control. After a successful period in the treatment one client crystallizes the meaning and result of his therapy process:

I've had experiences of surviving in life sober and then some feelings of the self-assertiveness. It has been different from my past experiences of drunkenness and nearly passing out: a nirvana kind of a state. I've felt calm and relaxed and have had a good feeling of stagnation: everything is not dying, but instead have come to a clarifying stop for awhile.

The so called significant moments linked with PA-treatment were moments of sedativeness, relaxation and feeling good. These included also moments of becoming aware of one's body and emotions as well as moments of active self-processing. Reported experiences were often moments of strong feeling of the presence and deep experiencing, which can be called flow-experiences (Csikszentmihalyi 1990). These positive moments, experienced without a "kick" from substance, can also be described as substitutive experiences of pleasure (see Erkkilä & Eerola 2001; Punkanen 2006). The special contribution of music therapy is to produce strong experiences in the form of significant moments. Such moments aid the music therapy process and create an aspect of well-being that defines a vital and satisfying life. For some clients these experiences were remarkable in the rehabilitation process. In clients' own words: It has felt meaningful to come here. You feel good and you want to continue with it.

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Heidi Ahonen-Eerikäinen, Ph.D., M.A., music therapist (MTA) accredited by the Canadian Association for Music Therapy (CAMT), group analyst (Psycho Therapy Institute, The Training Centre of the Mental Health Association, Finland, 1999), and registered psychotherapist of the highest advanced level (approved by the National Authority for Medicolegal Affairs, Finland, according to the laws of health care professions). From 1990 to 2001, Heidi established the music therapy training at North Karelia Polytechnic in Finland, taught music group psychotherapy at Sibelius Academy, Finland, and maintained her own clinical practices in Siilinjärvi and Helsinki. 1999-2005 she has also been teaching group psychotherapy and Trauma Psychotherapy at the Finnish Mental Health Association, Psycho Therapy Institute. Since 2001, Heidi has been Associate Professor of Music Therapy at Wilfrid Laurier University, Waterloo, Ontario, Canada; from 2003 on, she has been Director of the Laurier Centre for Music Therapy Research. Heidi specializes in working with clients who have experienced psychological trauma, PTSD, or burnout. She also has wide-ranging clinical and research supervisory experience. She is author of *Group Analytic Music Therapy* (2007, Barcelona Publishers) and six other textbooks (1992a/2000, 1992b, 1994, 1998, 1999, 1994b). She holds full membership in the Group-Analytic Society (UK), CGPA, AGPA, and IAGP.

Allan Sheps, MSW, RSW, FCGPA

Mr. Sheps is a Past President of the Canadian Group Psychotherapy Association and former co-director of the Canadian Group Psychotherapy Association, Toronto Section Training Program and former Chair of the Education and Training Committee of the Canadian Group Psychotherapy Association. A graduate of University of Toronto Faculty of Social Work in 1974, he has taught group therapy and offered workshops across Canada and the United States. He maintains a full-time private practice in Thornhill, Ontario where he leads both open-ended psychodynamic groups and short term groups focusing on Anger Management and issues of abusive behaviour by men. He was awarded a Fellowship by the Canadian Group Psychotherapy Association (FCGPA) in 1995. He is intrigued by the prospect of integrating music therapy and group psychotherapy.

For more information please email Dr. Heidi Ahonen-Eerikainen, Director of LCMTR for details about this great course.

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AMELIA OLDFIELD Ph.D.

Amelia Oldfield has over 27 years' experience as a music therapist. She currently works at the Croft Unit for Child and Family Psychiatry and at the Child Development Centre, Addenbrookes, Cambridge. She was the joint initiator of the two year MA Music Therapy course at Anglia Ruskin University, where she has been a part-time lecturer for the past 13 years. She has completed four research investigations and a PhD. She has written three books as well as a wide range of articles and chapters on various aspects of music therapy. She has also produced six music therapy training videos. She has run workshops and given papers all over Europe and in the USA. She is married, has four children and plays the clarinet in local chamber music groups in Cambridge.

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Trainees will be interviewed by the training committee



On November 25, 2006, the LCMTR hosted a unique international Physioacoustic Seminar in which Marco Karkkainen introduced the physioacoustic low frequency chair research projects.

FINISHED PROJECTS:

Almeida, Q., King, L., Ahonen-Erikainen, H., Karkkainen, M. (2007). Short-term Influences of the Physioacoustic Method on Symptoms in Parkinson's Disease.

Tiidus, P.M., Markoulakis, R., Murray, D., Bryden, P.J., Ahonen-Erikäinen, H., Karkkainen, M. (2007). Physioacoustic therapy: placebo effect on recovery from exercise-induced muscle damage.

D. Dalby, D., Sibille, N., Koch, R., Walker, M., Tschirhart, K., Ahonen-Erikainen, H., K. Rippin, K. (2005). Music Therapy: Implications for Quality Improvement and Quality of Life St. Joseph's Health Centre, Guelph. Final Report.

ONGOING PROJECTS:

Enhancing active participation through music therapy with the VMI. Funded for the full \$19,569 by the Bloorview Children's Hospital Foundation. Project started on Fall 2005. Researchers: Dr. R. Knox, Bloorview Children's Hospital; Dr. H. Ahonen-Erikainen, LCMTR, WLU; Andrea Lamont, MMT, MTA, Bloorview Children's Hospital.

An Inquiry into the Effectiveness of Music-Based Communication Therapy. Project started on February 2005. Researchers: N. Donnell, MMT, MTA, and K. Pace, MA, speech-language pathologist. A series of four ten-week sessions involving approximately 50 children have been conducted.

LCMTR sponsors the MMT students research presentations on Monday, September 24th, 2007:

Marissa Wu Feria, "Clinical Musicianship in Music Therapy: Awakening the inner musician"

Robert Harris, "Clinical Improvisation in Music Therapy: A rhythmical analysis"

Marc Houde, "Blues Improvisation Resources: An analysis and synthesis of the aesthetics of the blues and applications in clinical improvisation"

Cheryl Jones, "Exploring Music Therapists' Responses to the Expressed Spiritual Need of Clients"

Jenne Kong, "An Initial Investigation into the Music Therapy Referral Process: A single case study at a long term care facility in Ontario, Canada"

Elizabeth Mitchell, "Therapeutic Music Education: Linking the philosophies of educators and the experiences of students with music therapy"

Deborah Seabrook, "A World of Our Creation: Exploring consciousness in clinical improvisation with a girl experiencing mental health issues"

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Deborah Seabrook, MTA, MMT, As a practicing music therapist, my decision to return to study at the graduate level was fuelled by a desire to learn more about, and become involved with, music therapy research. I feel privileged that I had the opportunity to sit on the Management Board of the LCMTR during my time in the one year Master of Music Therapy program at Wilfrid Laurier University. To me, the LCMTR is a vital part of the music therapy community in Canada, initiating and supporting research projects across a spectrum of interests and fostering interdisciplinary research initiatives with allied fields. I look forward to future LCMTR conferences and workshops that bring together experts across various disciplines in the spirit of collaboration, musical inquiry and discovery.



Melissa Jessop, MMT, MTA, My connections to Laurier have been long-standing, first as a student (Bachelor of Music Therapy, 1994; Master of Music Therapy, 2003) and as a practicum supervisor and clinician within the Faculty of Music. Now, it is an honour and my extreme pleasure to join the Management Board of the Laurier Centre for Music Therapy Research. As a practising music therapist in the community, I hope to bring my experience and knowledge of developing and implementing music therapy programs within diverse environments to promote health and well-being. Since 1998, I have operated Music Therapy Affects, a private practice/business which provides professional music therapy services to long term care centres, day programs, and assisted living centres within the Region of Waterloo. I have also served on the Canadian Association for Music Therapy Board of Directors and currently provide consultation to the management board of Community Music Therapy Services, a developing charitable and non-profit organization in Waterloo.



Send all replies to:

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- Free membership; subscription to the centre's semi-annual newsletter; conference fee;
- an invitation to the annual meeting of the General Assembly (with eligibility to vote on policy and procedures).

The Laurier Centre for Music Therapy Research

LCMTR

The LAURIER CENTRE for MUSIC THERAPY RESEARCH

LCMTR Events: 2007 - 2008

music therapy news at Laurier

Upcoming Events:

International Conference June 12-15, 2008
Wilfrid Laurier University

“Making Connections: Exploring the relationship
between music therapy and music education”

Group Music Psychotherapy Certificate Course

January 2008-December 2009 -- part-time

Dr. Heidi Ahonen-Eerikainen and
Dr. Allan Sheps, Past President of the Canadian
Group Psychotherapy Association

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