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19 – 22 March, 2012
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Role of Music in Diabetes

Sharon Chong
MD, ALCM

1st World Congress on Healthy Ageing
Kuala Lumpur Convention Centre
20th March 2012

Introduction

- Multifaceted and complex role of music in health & well-being
- Ongoing research studies and publications of scientific evidence for integration into modern medicine
- Music as a spirit-lifting relaxation therapy in management of chronic ailments
- Diabetes as a result of stress and music as “stress buster”

Diabetic pain

- Music as simplest solution easily accessible without any known debilitating effects
- Pain dampening and distraction/ refocusing attention
- Endorphin release; Increase serotonin
- Sense of control and relaxation via control of breathing and heartbeat
- Stimulation of acupuncture points

(Pricket, C & Standley, J, 1994)



Music and Auditory Distraction Reduce Pain: Emotional or Attentional Effects?

Nicolas Silvestrini, PhD¹, Valérie Piguet, MD²,
Christine Cedraschi, PhD², and Marcel R. Zentner, PhD^{1,3}

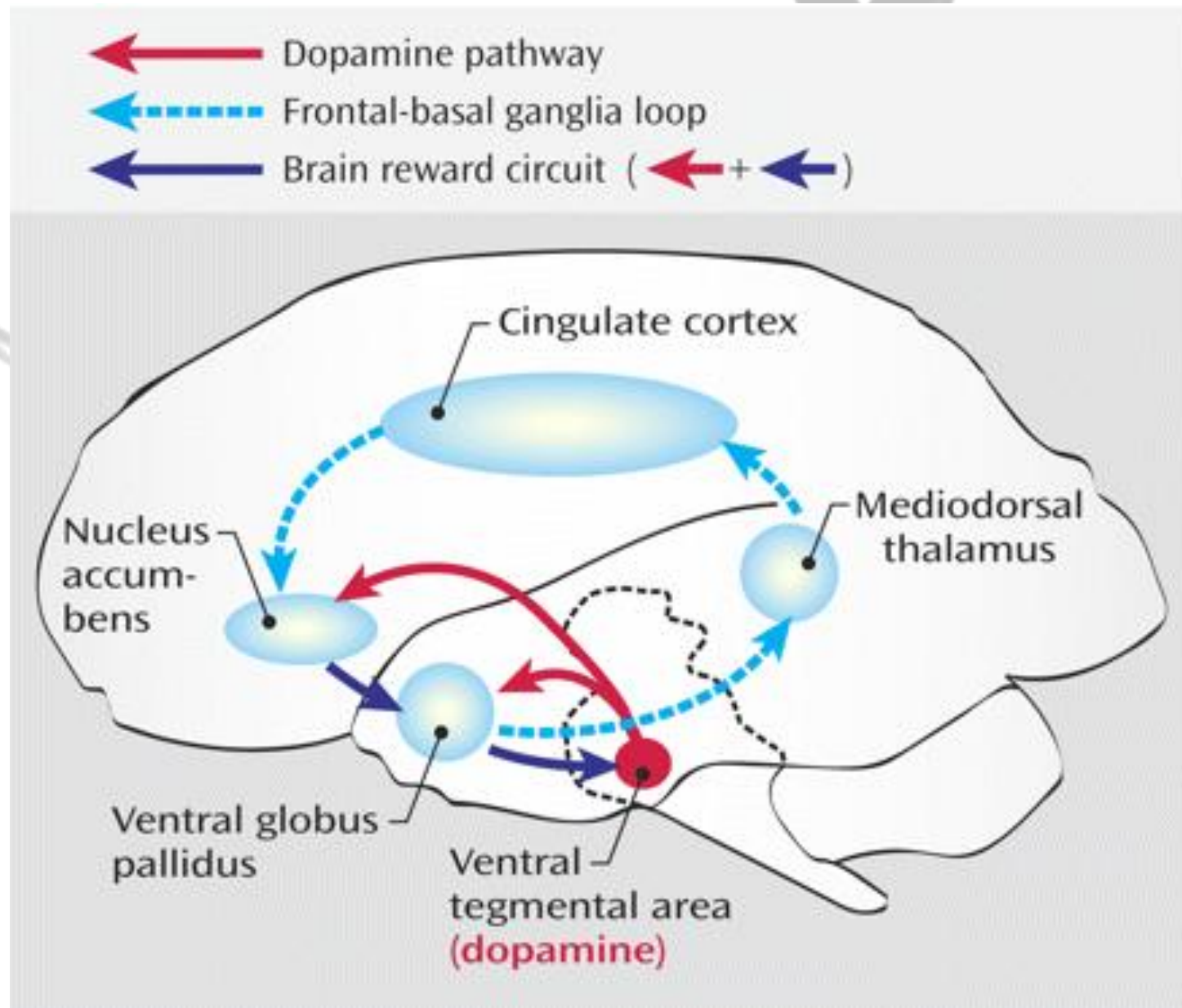
Abstract

This study investigated the impact of pleasant and unpleasant classical music on experimental pain, compared to silence and to an auditory attention task. Pain measurements were assessed with the nociceptive flexion reflex (NFR), pain ratings, and the cold pressor test on 20 healthy nonmusician participants in a within-participant design. Results indicated that, in comparison to silence and to the unpleasant music, pleasant music increased pain tolerance to the cold pressor test, and decreased pain ratings associated with the NFR but did not reduce the NFR itself. Furthermore, the auditory attention task had pain-reducing effects comparable with those of pleasant music. The findings are discussed with respect to possible underlying mechanisms involving emotions and distraction elicited by music and auditory stimulations.

Keywords

music, pain, emotion, attention, distraction

Activation of brain reward pathway



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Anatomically distinct dopamine release during anticipation and experience of peak emotion to music.

[Salimpoor VN](#), [Benovoy M](#), [Larcher K](#), [Dagher A](#), [Zatorre RJ](#).Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada. valorie.salimpoor@mail.mcgill.ca

Abstract

Music, an abstract stimulus, can arouse feelings of euphoria and craving, similar to tangible rewards that involve the striatal dopaminergic system. Using the neurochemical specificity of [(11)C]raclopride positron emission tomography scanning, combined with psychophysiological measures of autonomic nervous system activity, we found endogenous dopamine release in the striatum at peak emotional arousal during music listening. To examine the time course of dopamine release, we used functional magnetic resonance imaging with the same stimuli and listeners, and found a functional dissociation: the caudate was more involved during the anticipation and the nucleus accumbens was more involved during the experience of peak emotional responses to music. These results indicate that intense pleasure in response to music can lead to dopamine release in the striatal system. Notably, the anticipation of an abstract reward can result in dopamine release in an anatomical pathway distinct from that associated with the peak pleasure itself. Our results help to explain why music is of such high value across all human societies.

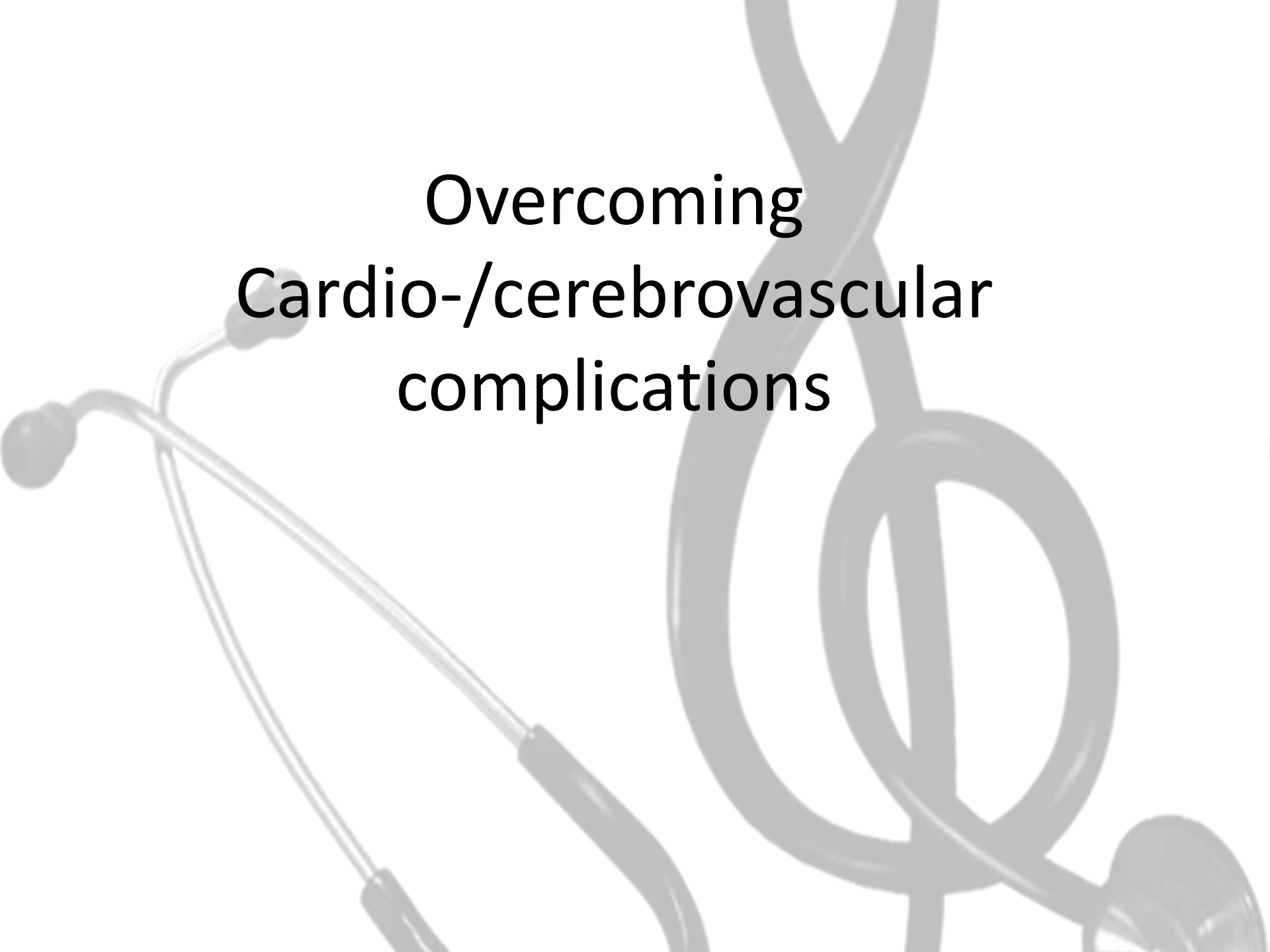
[Display Settings:](#) ☒ Abstract[Send to:](#) ☒[Neuroimage.](#) 2005 Oct 15;28(1):175-84. Epub 2005 Jul 14.

The rewards of music listening: response and physiological connectivity of the mesolimbic system.

[Menon V.](#) [Levitin DJ.](#)Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, CA 94305, USA. menon@stanford.edu

Abstract

Although the neural underpinnings of music cognition have been widely studied in the last 5 years, relatively little is known about the neuroscience underlying emotional reactions that music induces in listeners. Many people spend a significant amount of time listening to music, and its emotional power is assumed but not well understood. Here, we use functional and effective connectivity analyses to show for the first time that listening to music strongly modulates activity in a network of mesolimbic structures involved in reward processing including the nucleus accumbens (NAc) and the ventral tegmental area (VTA), as well as the hypothalamus and insula, which are thought to be involved in regulating autonomic and physiological responses to rewarding and emotional stimuli. Responses in the NAc and the VTA were strongly correlated pointing to an association between dopamine release and NAc response to music. Responses in the NAc and the hypothalamus were also strongly correlated across subjects, suggesting a mechanism by which listening to pleasant music evokes physiological reactions. Effective connectivity confirmed these findings, and showed significant VTA-mediated interaction of the NAc with the hypothalamus, insula, and orbitofrontal cortex. The enhanced functional and effective connectivity between brain regions mediating reward, autonomic, and cognitive processing provides insight into understanding why listening to music is one of the most rewarding and pleasurable human experiences.



Overcoming Cardio-/cerebrovascular complications

Int Heart J. 2009 Jan;50(1):95-110.

Effects of music therapy on autonomic nervous system activity, incidence of heart failure events, and plasma cytokine and catecholamine levels in elderly patients with cerebrovascular disease and dementia.

Okada K, Kurita A, Takase B, Otsuka T, Kodani E, Kusama Y, Atarashi H, Mizuno K.

Department of Internal Medicine and Cardiology, Nippon Medical School, Tokyo, Japan.

Abstract

Music therapy (MT) has been used in geriatric nursing hospitals, but there has been no extensive research into whether it actually has beneficial effects on elderly patients with cerebrovascular disease (CVD) and dementia. We investigated the effects of MT on the autonomic nervous system and plasma cytokine and catecholamine levels in elderly patients with CVD and dementia, since these are related to aging and chronic geriatric disease. We also investigated the effects of MT on congestive heart failure (CHF) events. Eighty-seven patients with pre-existing CVD were enrolled in the study. We assigned patients into an MT group (n = 55) and non-MT group (n = 32). The MT group received MT at least once per week for 45 minutes over 10 times. Cardiac autonomic activity was assessed by heart rate variability (HRV). We measured plasma cytokine and catecholamine levels in both the MT group and non-MT group. We compared the incidence of CHF events between these two groups. In the MT group, rMSSD, pNN50, and HF were significantly increased by MT, whereas LF/HF was slightly decreased. In the non-MT group, there were no significant changes in any HRV parameters. Among cytokines, plasma interleukin-6 (IL-6) in the MT group was significantly lower than those in the non-MT group. Plasma adrenaline and noradrenaline levels were significantly lower in the MT group than in the non-MT group. CHF events were less frequent in the MT group than in the non-MT group ($P < 0.05$). These findings suggest that MT enhanced parasympathetic activities and decreased CHF by reducing plasma cytokine and catecholamine levels.

Music therapy for heart and stroke patients

Published on June 23, 2009 at 6:28 AM · No Comments

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Blood flow and respiratory rates can synch with music, indicating that music could one day be a therapeutic tool for blood pressure control and rehabilitation, according to a study by Italian researchers published in *Circulation: Journal of the American Heart Association*.

The researchers found in an earlier study (*Heart*. 2006 Apr;92(4):445-52) that music with faster tempos resulted in increased breathing, [heart rate](#) and blood pressure.

When the music was sometimes below 100 beats per minute, it had no previous musical training. Study participants were fitted with headphones and were attached to electrocardiogram (ECG) and monitors to measure blood pressure, cerebral artery flow, respiration and narrowing of blood vessels on the skin.

In an extension of the study, it appeared to induce a decrease in blood pressure. Five random tracks of classical music were played - including selections from Beethoven's Ninth Symphony; an aria from Puccini's *Turandot*; a Bach cantata (BWV 169); *Va Pensiero* from *Nabucco*; *Libiam Nei Lieti Calici* from *La Traviata* - as well as two minutes of silence.

"Music induces a cardiovascular response," said professor of Interdisciplinary Studies in Music and Emotion that created the study.

Researchers found:

- Every crescendo led to increased narrowing of blood vessels under the skin, increased blood pressure and heart rate and increased respiration amplitude. In each music track the extent of the effect was proportional to the change in music profile.
- During the silent pause, changes decreased, with blood vessels under the skin dilating and marked reductions in heart rate and blood pressure. Unlike with music, silence reduced heart rate and other variables, indicating relaxation.
- Music phrases around 10 seconds long, like those used in "*Va Pensiero*" and "*Libiam Nei Lieti Calici*," synchronized inherent cardiovascular rhythm, thus modulating cardiovascular control.

"The profile of music (crescendo or decrescendo) is continuously tracked by the cardiovascular and respiratory systems," Bernardi said. "This is particularly evident when music is rich in emphasis, like in operatic music. These findings increase our understanding of how music could be used in rehabilitative medicine."

[Music as adjuvant therapy for coronary heart disease. Therapeutic music lowers anxiety, stress and beta-endorphin concentrations in patients from a coronary sport group].

[Article in German]

Vollert JO, Störk T, Rose M, Möckel M.

Medizinische Klinik mit Schwerpunkt Kardiologie, Charité-Universitätsmedizin Berlin, Campus Virchow-Klinikum. joern.vollert@charite.de

Abstract

BACKGROUND: In a study with coronary patients it was estimated that music is able to lower stress and fear and contributing to relaxation in spite of physical exercise.

PATIENTS AND METHODS: 15 patients (13 male, two female, mean age 62,2 +/- 7,6 years) of a coronary sport unit were listening to an especially composed relaxation music while training their common heart-frequency adapted exercises. Before the exercises and after listening to music blood pressures were measured and blood was collected for determination of beta-endorphin. Simultaneous to blood collection the participants had to perform two psychometric test: the perceived stress experience questionnaire (PSQ) of Levenstein to measure the graduation of subjective perceived stress and the state-anxiety inquiry (STAI) of Spielberger as an indicator of coping. To practice the trial ("test trial"), the whole protocol was performed one week prior to the mean trial, but without listening to music and without blood collections and blood pressure measurements.

RESULTS: In the test trial without music there were no significant changes in PSQ-data. In the mean trial, under the influence of music, values in the section "worries" decreased as a sign of lower worries (26.6 versus 27.6; $p = 0.039$). STAI-values were significantly lower as a sign of reduced fear after listening to music (31 versus 34; $p = 0.045$). beta-endorphin concentration (10.91 microg/l versus 15.96 microg/l, $p = 0.044$) and systolic blood pressure (130 mmHg versus 140 mmHg; $p = 0.007$) decreased significantly after listening to music.

CONCLUSIONS: Regarding worries and fear, patients seemed to benefit by the intervention of music. beta-endorphin was lowered significantly after music despite physical activity.



Music improves dopaminergic neurotransmission: demonstration based on the effect of music on blood pressure regulation

Den'etsu Sutoo*, Kayo Akiyama

Institute of Medical Science, University of Tsukuba, Tsukuba, Ibaraki 305-8575, Japan

Accepted 3 May 2004

Available online 19 June 2004

Abstract

The mechanism by which music modifies brain function is not clear. Clinical findings indicate that music reduces blood pressure in various patients. We investigated the effect of music on blood pressure in spontaneously hypertensive rats (SHR). Previous studies indicated that calcium increases brain dopamine (DA) synthesis through a calmodulin (CaM)-dependent system. Increased DA levels reduce blood pressure in SHR. In this study, we examined the effects of music on this pathway. Systolic blood pressure in SHR was reduced by exposure to Mozart's music (K.205), and the effect vanished when this pathway was inhibited. Exposure to music also significantly increased serum calcium levels and neostriatal DA levels. These results suggest that music leads to increased calcium/CaM-dependent DA synthesis in the brain, thus causing a reduction in blood pressure. Music might regulate and/or affect various brain functions through dopaminergic neurotransmission, and might therefore be effective for rectification of symptoms in various diseases that involve DA dysfunction.

EFFECT OF MUSIC ON CARDIOVASCULAR PERFORMANCE DURING TREADMILL WALKING

Carla Hepler and Rachel Kapke

by

Human Performance Laboratory, Truman State University, Kirksville, MO

Original Publication Information:

PERD Journal Volume 29, No.2 Spring, 1996.

INTRODUCTION

Music has become an increasingly important aspect of sport and fitness. It provides motivation and distraction for those beginning an exercise program. However, the newest ideas concerning sport and music involve relaxation. Current research indicates that a relaxed and calm state of mind has a beneficial effect on exercise efficiency (Copeland & Frank, 1991). Music is often used to achieve this relaxed state of mind. It has the ability to create an arousal state in which individuals may narrow attention, focus inward, and thus block out distractions (Dorney, Goh & Lee, 1992). While both exercise and music have proven to be effective coping mechanisms, limited research has linked the positive outcomes of these practices to each other. The purpose of this study was to compare the differences in physiological responses of subjects exercising with a musical relaxation aid to those exercising without it.

METHODS

Ten college students of varying physical fitness levels performed two 10-minute walks at 70% of age-predicted maximal heart rate on a motorized treadmill. Subjects were randomly assigned to exercise with headphones playing a relaxation tape during the walk or with no external intervention. Each test was administered on separate days with a minimum of one week between test sessions.

Throughout the walk subjects were connected to an automated metabolic cart to determine metabolic function. A PolarTM heart rate monitor was used to determine heart rate. The average of the final six minutes for each condition was used for analysis.

RESULTS

While ventilation and VO_2 were not significantly different between the treatments, they were 3.6% and 9.0% lower, respectively, during the exercise to music trial (Table 1). Heart rate was significantly ($p < 0.05$) lower during the exercise to music condition by 4.7% (Table 1).

CONCLUSIONS

Relaxation music did not significantly change the energy cost of walking, but it did produce a significantly lower cardiac stress. This agrees with previous work and indicates that music can influence exercise mood (Copeland & Franks, 1991). If the objective is to keep cardiac stress low while maintaining an exercise effect, as in a cardiac rehabilitation or stress management setting, relaxation music would be appropriate ergogenic aid. It is possible longer durations of exercise might manifest greater effects for the relaxation music condition.

Music Helps Stroke Victims Communicate, Study Finds

SAN DIEGO—For the many stroke victims devastated by the loss of their ability to speak, music may hold the key to unlocking language, according to a new study.

The research, presented at the annual meeting of the American Association for the Advancement of Science here Saturday, produced often dramatic results in 12 patients whose speech was impaired after a stroke to the left hemisphere of the brain. Such patients struggle to communicate or cannot speak at all.

In the study, patients who were taught to essentially sing their words improved their verbal abilities and maintained the improvement for up to a month after the end of the therapy, according to Gottfried Schlaug, a neurology professor at Beth Israel Deaconess Medical Center and Harvard Medical School.

The patients may continue to speak in a more "sing-songy" way than a person with normal speech, but they are able to say functional phrases, such as that they are thirsty or where they live, according to Dr. Schlaug, whose work was met with enthusiastic applause after his presentation.

The treatment, called melodic intonation therapy, was devised in the 1970s after clinicians observed that some patients who suffered strokes were no longer able to talk but could still sing. However, the therapy never really caught and its efficacy hasn't been fully assessed, Dr. Schlaug said.

In melodic intonation therapy, therapists teach patients how to sing words and phrases consistent with the underlying melody of speech, while tapping a rhythm with their left hands. After frequent repetition—1.5 hour-long daily sessions with a therapist for 15 weeks—the patients gradually learn to turn the sung words into speech.



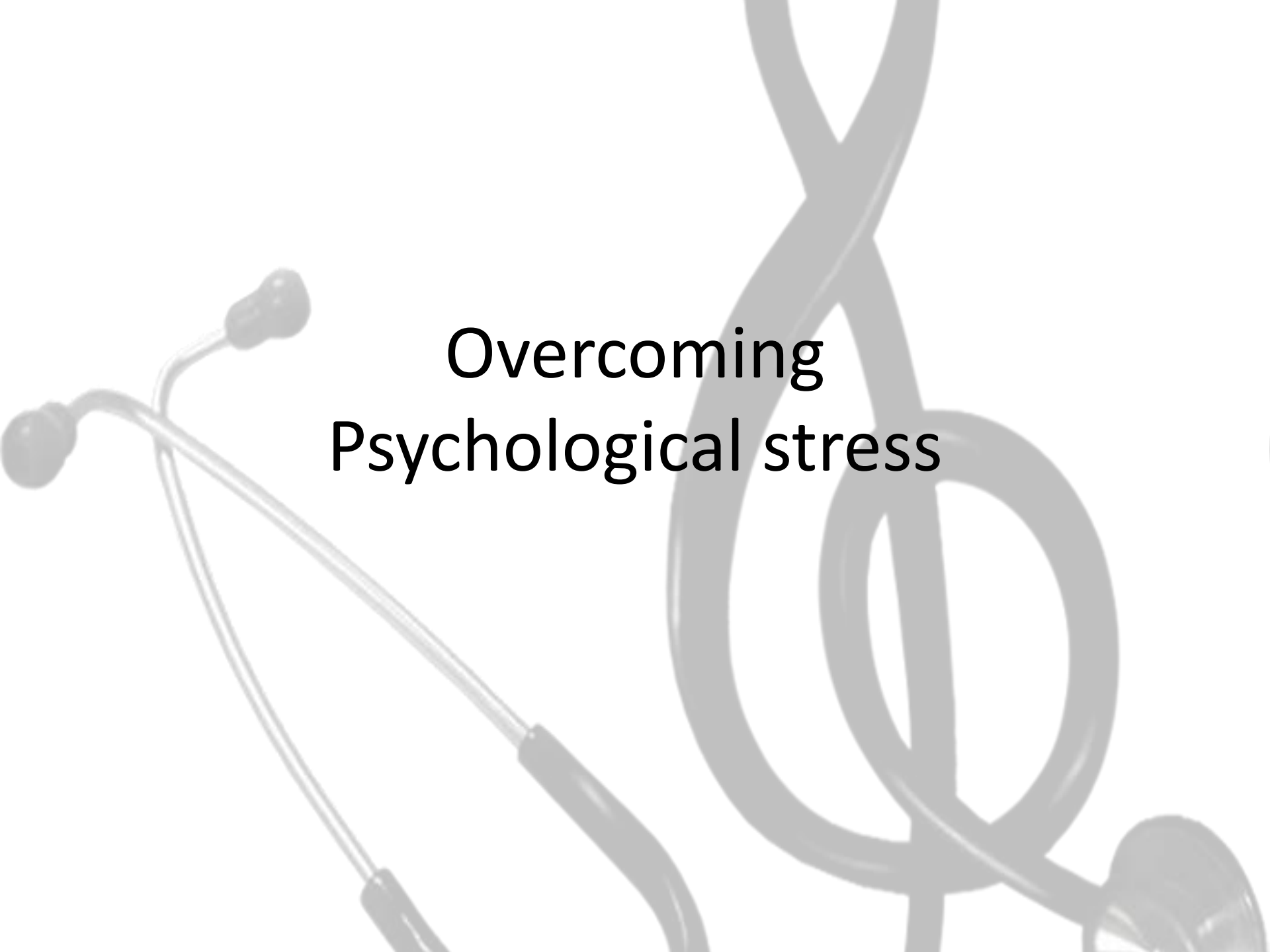
The theory behind the treatment is that there are separate brain networks associated with vocal output, with one more engaged with speech and the other with music. With certain types of stroke, fibers on the left side of the brain that are important to the interaction of the auditory and the motor system are disrupted. But if the brain could recruit the fibers from the right side, which are more engaged with music, then the system could adapt. Dr. Schlaug believes that the tapping of the left hand works to engage the auditory and motor systems.

Some 750,000 to 800,000 people in the U.S. suffer strokes each year, and 20% to 25% of those are affected by aphasia, or a deficit in language. Dr. Schlaug estimates that one-third of those aphasic patients, or about 80,000 to 70,000 a year, could benefit from the treatment if it is proven effective.

Many questions remain about the treatment, including whether the singing is the active ingredient to the treatment, or whether it is something else, such as word repetition presented in a more interesting manner. It also isn't known how important the tapping of the left hand is to the therapy. To figure out if the treatment actually works and to answer some of these questions, Dr. Schlaug has begun a randomized clinical trial comparing melodic intonation therapy to a group of patients receiving word-repetition based treatment and separately those on a waiting list.

The patients who benefit the most from the treatment are those who are able to hear the "melodic contour" of words and thus generalize their learning beyond the words taught by their therapist. The majority of the patients he has worked have this ability, he said.

"If you don't hear the words you want to say, then it doesn't really matter whether you can produce them," Dr. Schlaug said.

A light gray stethoscope is positioned diagonally across the frame, with its chest piece at the bottom right and its earpieces at the top left. In the background, a large, faint treble clef is visible, partially obscured by the stethoscope's tubing.

Overcoming Psychological stress

The Effect of Depression and Negative Attitudes on Glycemic Control in Diabetics Subjects

WANG Xiang, ZHU Xiongzhao, WANG Li, Research Center of Clinical Psychology, Hunan Medical University, Changsha

To investigate the effect of depression and negative attitudes on plasma glucose and complications in diabetic subjects. Methods: A total of 260 adults with diabetes completed a Diabetes Self-rating Questionnaire composed of 16 items on negative attitudes to diabetes and depression. The subjects were divided into depression and non-depression groups according to depression scores. Glycemic control was assessed using fasting plasma glucose (FPG) levels and HBA1C testing. Results: The depressive mood scores were significantly correlated with FPG and HBA1C levels. The scores of negative attitude, somatic symptoms and depressive mood were significantly correlated with the number of complications. The FPG level and the number of complications had significant differences in the two groups, while the HBA1C level had no significant difference in the two groups. Conclusions: Bad emotion were significantly correlated with poor glycemic control. Depression was probably one of the factors that caused diabetes-related complications.

【Key Words】: Diabete Depression Negative attitude

【Fund】: 国家自然科学基金!重点项目资助的一部分 (项目号 :3 94 3 0 0 70)

【CateGory Index】: R395.1

【DOI】: CNKI:SUN:ZLCY.0.2000-01-008

Relaxing Music Prevents Stress-Induced Increases in Subjective Anxiety, Systolic Blood Pressure, and Heart Rate in Healthy Males and Females

Wendy E. J. Knight

Nikki S. Rickard, PhD

Monash University

Previous research suggests that while subjective anxiety is reduced by relaxing music, the effect of music on physiological stress indices is less consistent. In the current study, the effect of relaxing music on participants' subjective and physiological response to stress was explored, with attention paid to methodological factors and mediating variables that might have contributed to inconsistencies in previous studies. Undergraduate students (43 females & 44 males) were exposed to a cognitive stressor task involving preparation for an oral presentation either in the presence of Pachelbel's Canon in D major, or in silence. Measures of subjective anxiety, heart rate, blood pressure, cortisol, and salivary IgA were obtained during rest and after presentation of the stressor. The stressor caused significant increases in subjective anxiety, heart rate, and systolic blood pressure in male and female controls. These stress-induced increases were each prevented by exposure to music, and this effect was independent of gender. Music also enhanced baseline salivary IgA levels in the absence of any stress-induced effects. These findings provide experimental support for claims that music is an effective anxiolytic treatment, the robustness of which is demonstrated by retention of the effect in the presence of a range of potentially mediating variables.

The effect of music therapy on mood and anxiety–depression: An observational study in institutionalised patients with traumatic brain injury

S. Guétin^{a,b,c,1,*}, B. Soua^{a,c}, G. Voiriot^c, M.-C. Picot^d, C. Hérisson^e

^a*Service de neurologie, centre Mémoire de ressources et de recherches (CMRR), Inserm U888, CHRU Montpellier, 34295 Montpellier, France*

^b*Association de musicothérapie applications et recherches cliniques (Amarc), 75017 Paris, France¹*

^c*Foyer d'accueil médicalisé « Les-Fontaines-d'Ô », ADAGES, 71, rue Henri-Noguères, 34090 Montpellier, France*

^d*Département d'information médicale, CHRU Arnaud-de-Villeneuve, CHRU, 34295 Montpellier cedex 5R, France*

^e*Service de rééducation fonctionnelle, CHRU de Montpellier, 34295 Montpellier cedex 5, France*

Received 31 July 2008; accepted 26 August 2008

Abstract

Introduction.– A previous study (carried out in 2003–2004) had included 34 patients with traumatic brain injury in order to study the feasibility and usefulness of music therapy in patients with this type of injury.

Objective.– To evaluate the effect of music therapy on mood, anxiety and depression in institutionalised patients with traumatic brain injury.

Study methodology.– A prospective, observational study.

Materials and methods.– Thirteen patients with traumatic brain injury were included in the present study and took part in individual, weekly, 1-hour music therapy sessions over a period of 20 weeks. Each session was divided into two 30-minute periods – one devoted to listening to music (receptive music therapy) and the other to playing an instrument (active music therapy). The assessment criteria (measured at weeks 1, 5, 10, 15 and 20) were mood (on the face scale) and anxiety–depression (on the Hospital Anxiety and Depression [HAD] Scale). Mood was assessed immediately before and after the first music therapy session and every fifth session.

Results.– Music therapy enabled a significant improvement in mood, from the first session onwards. This short-term effect was confirmed by the immediate changes in the scores after music therapy sessions (from 4.6 ± 3.2 to 2.6 ± 2 ; $p < 0.01$). Music therapy also led to a significant reduction in anxiety–depression ($p < 0.05$) from week 10 onwards and up until the end of the study (week 20).

Conclusion.– These results confirm the usefulness of music therapy in the treatment of anxiety–depression and mood in patients with traumatic brain injury. Music therapy could usefully form an integral part of the management programme for these patients.



The Effect of Music on the Production of Neurotransmitters, Hormones, Cytokines, and Peptides: A Review

Abhishek Gangrade¹

Abstract

Research on the effects of music exposure on the release of biochemical messengers is an expanding field. The importance of understanding the influence of music on messenger production is a means of explaining behavioral reactions through physiological mechanisms. Signaling molecules that prove integral for important regulatory functions include neurotransmitters, hormones, cytokines, and peptides. Thus music elicits responses promoting positive emotions, alleviation of stress, and immune function. Study of the production of the messengers reveals the connection between the mind and the body. The purpose of the review is to provide a closer look into the effectual relationship between music and production of these messengers by providing literature and analysis.

Keywords

cytokines, hormones, music medicine, neurotransmitters, peptides

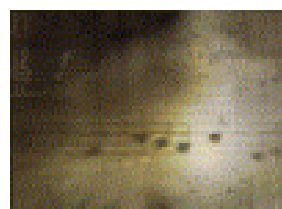
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Music preference and relaxation in Taiwanese elderly people

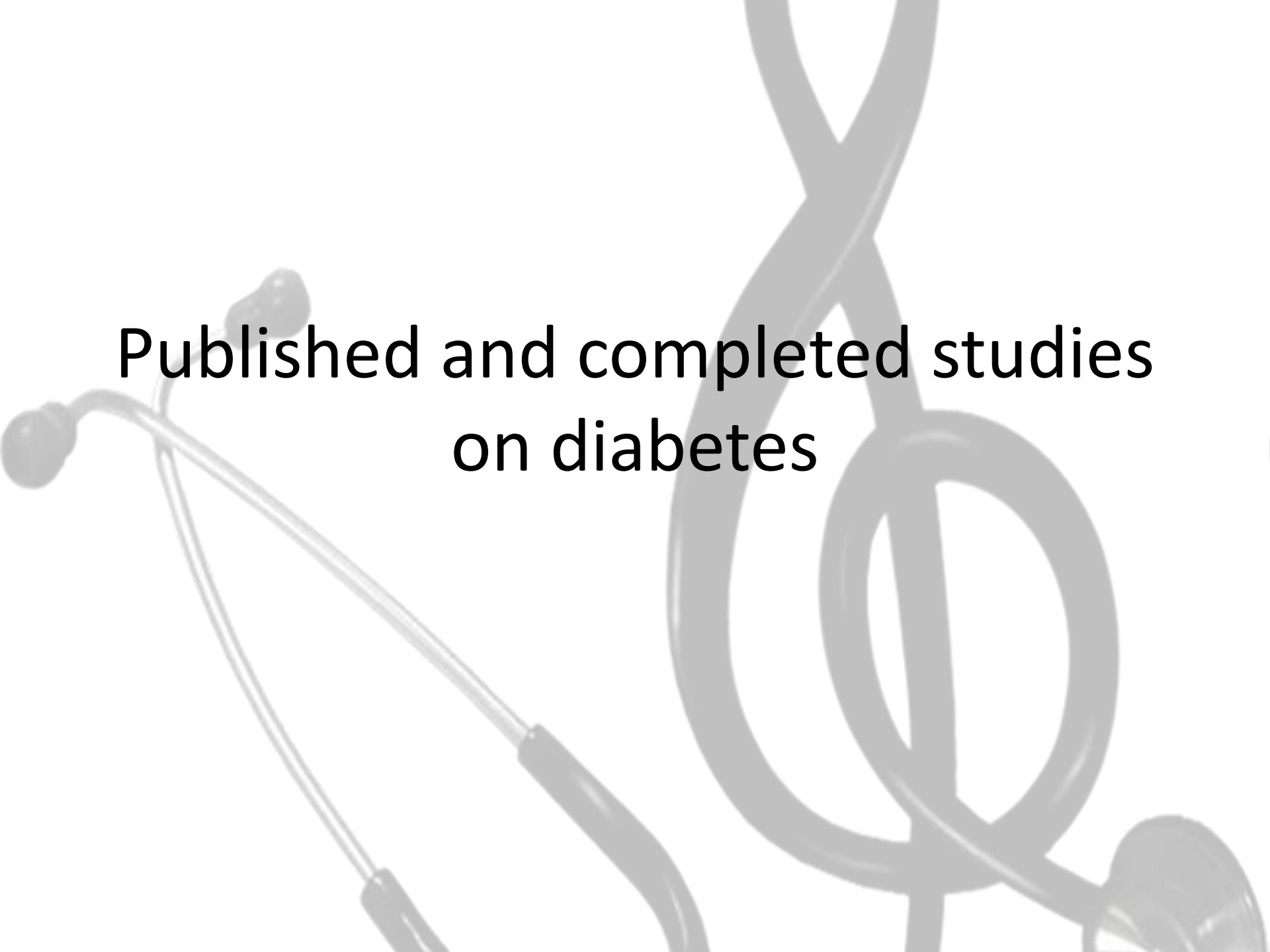
Hui-Ling Lai PhD, RN¹

Available online 12 October 2004.

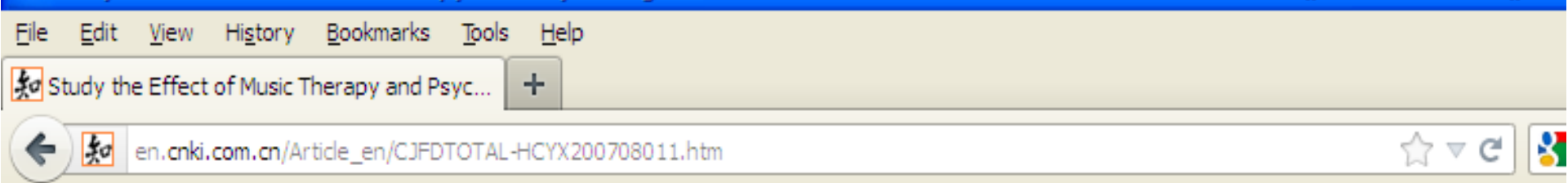
Abstract



The purpose of this study was to identify individual musical preferences, investigate the relationship between an individual's musical preferences and demographic variables, and examine the effects of the selected music on relaxation. Fifty healthy subjects (mean age 65.7; SD = 5.2) from the community participated in the study. Musical preference interviews and relaxed responses to selected music were administered to the study participants individually in the investigator's office. Participants' heart rates, respiratory rates, and finger temperature were measured before they listened to the introductory tape and again after they listened to the selected music for 20 minutes. The participants were asked to judge how much they liked the 6 types of soothing music and were asked to rate it on a scale. The results indicated that Chinese orchestral music was the preferred choice, followed by harp, piano, synthesizer, orchestral, and finally slow jazz. There were no differences among types of music on relaxation, and no significant differences between musical preference and any demographic variables. The heart rates and respiratory rates of the participants were significantly lower ($t = 21.24$, $P < .001$ and $t = 20.09$, $P < .001$, respectively). Finger temperature ($t = -33.20$, $P < .001$) raised significantly after listening to the selected music. These findings suggest that soothing music selections have beneficial effects on relaxation in community-residing elderly people.



Published and completed studies
on diabetes



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Study the Effect of Music Therapy and Psychological Intervention in Treatment of Diabetic Patients

YU Shu-jing, et al (The Municipal Hospital of Zaozhang, Shandong Zaozhuang 277100, China)

Objective: To study the effect of music therapy and Psychological intervention in treatment of diabetic patients. **Method:** 180 cases with diabetes mellitus were interviewed and evaluated with Zung Self-rating Depression Scale (SDS), Zung Self-rating Anxiety Scale (SAS), Control Status Scale for Diabetes (CSSD70) and Diabetes Quality-of-Life Scale (DQOL). Under basic treatment, 180 cases were randomized to two groups: the therapy group (A) and the control group (B). Group A were treated combination with music therapy. **Result:** The prevalences of depression in diabetes were 45.2%. The level of blood glucose, HbA1c, blood pressure, control situation of diabetes and quality of life were reduced significantly in group A after 3 months treatment compared with group B. **Conclusion:** Music therapy and psychological intervention were helpful for comprehensive therapy in diabetes.

【Key Words】: Music therapy Diabetes mellitus

【Category Index】: R587.1

【DOI】: CNKI:SN:HCYX 0 2007-08-011

The Study of Psychological Intervention Music Therapy and Team Treatment in Diabetes Patients

DENG Li(Zaozhuang Municipal Hospital,Shandong Zaozhuang 277102,China)

Objective: To evaluate the effect of music therapy etc in treatment of diabetes patients.Method: 120 cases with DM were interviewed and analyzed by SDS,SAS and Diabetes Quality-of-Life Scale(QOL).Patients in therapy group were given music therapy, psychological intervention and diabetes team treatment.The patients in control group were only given diabetes drug and diet treatment.Result: The level of blood glucose at fasting and 2 hours,TC,TG,HDL,LDL,GHbA1c, SBP were reduced in both groups after treatment,but there was significant difference between the study group and control group.Conclusion: Music therapy,psychological intervention and diabetes team treatment were deserved be recommended.

【Key Words】: **DM Music therapy Psychological intervention Treatment team**

【CateGory Index】: R587.1

【DOI】: cnki:ISSN:1006-6233.0.2006-09-027

《Chinese Journal of Prevention and Control of Chronic Non-communicable Diseases》2005-03

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The Application Evaluation of the Music and the Psychological Remedy in Patients with Diabetes

ZHOU Jing, DENG li and FEI Da-dong. The Department of the Endocrinology, Zao-Zhuang Municipal Hospital,
Shangdong 277102, China

Objective To Study the effect of Music Therapy and psychological intervention in patients with Diabetes. Method of 120 cases with diabetes mellitus were interviewed and analyzed by Zung Self-rating Depression Scale (SDS) and Zung Self-rating Anxiety Scale(SAS) and Diabetes Quality-of-Life Scale(DQOL), 60 cases were treated with music and psychological intervention and Diabetes treatment Results The levels of fast blood glucose, OGTT2hr blood glucose and HbA1c were reduced in both groups after study, but the treatment group decreased more and fluctuate less than the control group. Conclusion Music therapy and psychological intervention could improve glucose metabolism and depressive symptoms and deserved to be recommended.

【Key Words】: **Diabetes Music therapy Psychological therapy**

【CateGory Index】: R587.1

【DOI】: CNKI:SN:ZMXXB 0 2005-03-009

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A light gray stethoscope is positioned diagonally across the frame, with its chest piece at the bottom right and its earpieces at the top left. In the background, a large, light gray treble clef is visible, partially obscured by the stethoscope. The text "Ongoing research" is centered in the middle of the image.

Ongoing research

Groundbreaking Music Therapy Study

Last Updated on Tuesday, 17 November 2009 16:04

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PAINESVILLE, Ohio, March 9, 2009 - Lake Health today announced that it has received a \$60,000 grant from the Kulas Foundation to support a groundbreaking study that will measure the effects of music therapy on health-related outcomes for patients with diabetes.

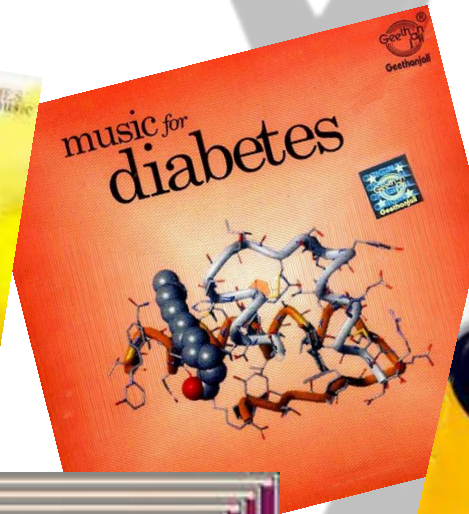
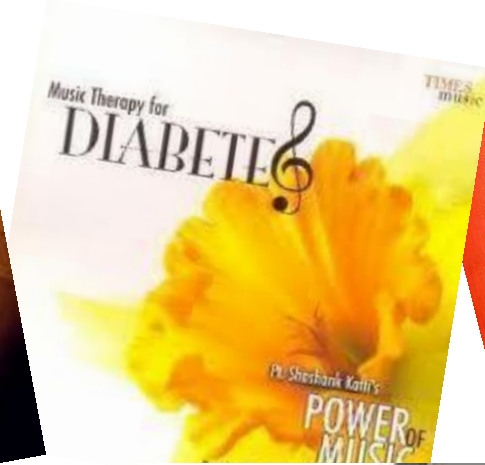
Lake Health is seeking 200-300 participants for the three-year music therapy study, the first of its kind conducted with diabetes patients. Scheduled to begin in April 2009, the study is designed to compare the effects of diabetes self-management training; music-assisted relaxation and imagery administered via compact disc recording; and music therapy facilitated by a board-certified music therapist. Participants will be regularly monitored throughout the study by health professionals who specialize in diabetes. Outcomes to be studied include blood pressure, hemoglobin A1c (blood sugar), body mass index, anxiety and stress.

According to 2007 data from the Centers for Disease Control, 23.6 million people in the United States—7.8 percent of the population—have diabetes. While music therapy studies have been conducted on a wide range of medical conditions—from Alzheimer's disease to coronary heart disease and cancer—little is known about the effect of music therapy on the health of patients with diabetes.

"Given the epidemic incidence of diabetes, it's a high priority to investigate integrative approaches to treatment that offer added benefit to patients engaged in diabetes self-management training," said Susan E. Mandel, Ph.D., MT-BC, a board-certified music therapist who will serve as the study's primary investigator. "Based on our prior music therapy research at Lake Health, we're hopeful that the study will demonstrate the potential for music therapy to enhance the overall health and well-being of patients with diabetes."

Diabetes is unique among chronic health conditions because, to a large extent, treatment depends upon self-management. Many patients participate in diabetes self-management training, which provides them with an overall education about diabetes, including how to monitor blood glucose levels as well as knowledge about diet,

Pre-recorded music for Diabetes



- Music vibrations stimulate beta cell activities
- Stabilizing emotions affecting blood sugar level

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THANK YOU

Email: sharon@dsywellness.com