Efficacy of Music Therapy on Prevention and Treatment of Stress and Related Disorders

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Abstract

Music therapy is now a scientifically validated approach in alternate medicine and preventive healthcare. Its efficacy has been proved to effectively prevent and treat a variety of disorders. In this article we present a review on important studies that have been carried out till date on the efficacy of music therapy on stress and related disorders.

Index terms—

1 Introduction

tress may be the single most significant factor considered responsible for many physical and psychological problems. The effects of stress and anxiety have been widely recognized. Although stress at its optimum level can produce positive action, excess stress contributes to the development of physical ailments such as hypertension, ulcers, skin disorders, headaches, arteriosclerosis, and other life-threatening diseases. In this article, we present some of the interesting studies that have been carried out till date which scientifically validate the efficacy of music therapy on stress and related disorders.

Stress manifests as cognitive (memory problems, difficulty concentrating, poor judgement, anxious thoughts, constant worry), physical (aches, pain, diarrhoea/constipation, chest pain/rapid heartbeat, loss of sex drive, frequent colds), emotional (agitation/ unable to relax, moodiness, shot tempered/irritable, depression/unhappiness, feeling overwhelmed) and behavioural (eating more/less, sleeping too much/too little, neglecting responsibilities, using alcohol/ cigarettes, drugs, nervous habits like nail biting et) changes in any individual. The main stress hormone that modifies physical and mental functioning is cortisol.

2 II.

3 Music Therapy and its Effect on Stress and Related Disorders

Relaxing music has been scientifically proven to reduce stress-induced increases in anxiety, systolic blood pressure, and heart rate in healthy males and females. Effect of relaxing music on participants' subjective and physiological response to stress was explored. 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, S 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. Interestingly, 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 (Knight and Rickard 2001).

Findings from clinical research suggest that music may facilitate a reduction in the stress response by decreasing anxiety levels, blood pressure and heart rate, and changes in plasma stress hormone levels. Music therapy was found to be useful in a wide range of clinical settings with patients experiencing health problems as diverse as hypertension/cardiovascular disease, migraine headaches, and gastrointestinal ulcers (Watkins 1997). Studies

suggest that music therapy is an effective intervention for patients with chronic pain, children with migraine, and patients suffering from chronic tinnitus (Nickel et al 2005).

A simple blind, controlled, parallel groups, prospective randomized clinical trial was conducted to investigate the effect of music therapy on levels of intraoperative anxiety in patients undergoing crossectomy with stripping of the great saphenous vein and to assess the efficacy, safety, and feasibility of this alternative therapy as a complement of standard intraoperative care in the surgery room of Getafe University Hospital in Madrid. The study was carried out in 40 patients, 20 randomized to the experimental group and 20 randomized to the control group, with an age range from 27 to 70 years. The anxiety levels were measured by means of pre-and postsurgical questionnaires. Heart rate and systolic and diastolic blood pressures were determined during the intervention, and adrenaline and noradrenaline plasma levels were determined before and after the surgical procedure. The anxiety state and the stress feeling scale score after surgery were significantly inferior in the music therapy group.

Individuals with coronary heart disease (CHD) often suffer from severe distress putting them at greater risk for complications. Music interventions have been used to reduce anxiety and distress and improve physiological functioning in medical patients. Findings Condition Result of the study Reference Relaxation, music and imagery strengthen the right hemisphere of the brain, influencing the immune system, the ability to direct healing processes of the body, and enhancement of positive attitudes towards health and personal interactions. Godley 1987 In a cohort study 55 migraine patients treated with this EEG-based music therapy. 56% of the patients showed an improvement of at least 50% of their symptoms after a twelve months treatment.

4 Meister et al 1999

Music therapy in treatment of children with migraine was successfully used.

5 Nickel et al 2003

Music alters constitutively expressed opiate and cytokine processes in listeners.

6 Stefano et al 2004

Statistically significant improvement for the group receiving music therapy was observed on the measures of anxiety, fear, fatigue, relaxation, and diastolic blood pressure.

7 Ferrer 2007

Recreational music-making modulates natural killer cell activity, cytokines, and mood states in corporate employees.

8 Wachi et al 2007

Positive musical effects on two types of negative stressful conditions have been studied.

Yamamoto et al 2007 After 15 sessions, the music intervention group showed significant improvements in depression, anxiety, and relationships compared with the control group.

9 Choi et al 2008

Listening to music during surgery in regional anaesthesia has effects on cortisol levels and reduces use of sedative requirement

10 Koelsch et al 2011

Participants receiving music therapy plus standard care showed greater improvement than those receiving standard care only in depression symptoms higher for the music therapy plus standard care group than for the standard care only group. Music therapy intervention was easily implemented in the context of nursing care received during varicose vein surgery and was positively accepted and valued by the majority of the patients. It was reported that music therapy is a safe procedure that is proved to reduce anxiety and stress in the study patients (Jiménez-Jiménez 2013).

11 Erkkila et al 2011

One large study found that music listening was more effective than the sedative midazolam, in reducing preoperative anxiety and equally effective in reducing physiological responses. No adverse effects were identified. It was concluded that music interventions might provide a viable alternative to sedatives and anti-anxiety drugs for reducing preoperative anxiety (Bradt et al 2013).

In a recent study, the effects of music therapy on anxiety, stress and maternal-foetal attachment in pregnant women during a transvaginal ultrasound were examined. The experimental group received general prenatal care and a single 30-minute session of music therapy, while the control group received only general prenatal care. The music therapy group showed statistically significant decrease in anxiety compared to control group but no significant difference was identified in stress and maternal-foetal attachment (Sook et al 2011).

Many patients in the surgical holding area become stressed and anxious. In a hospital, setting music reduces patients' anxiety. In this study, one group of subjects listed to music while a second group did not. Subjects who listened to music while in the surgical holding area had significantly less stress and anxiety than did those, who did not listen to music **??**Winter et al 1994). Listening music prior to a standardized stressor predominantly affected the autonomic nervous system (in terms of a faster recovery), and to a lesser degree the endocrine and psychological stress response.

12 Thoma et al 2013

13 Effect of psychobiological stress

Assessemt of music listening and psychobiological stress in daily life by noninvasively measuring salivary cortisol (as a marker of the Hypothalamic-Pituitary-Adrenal (HPA) axis) and salivary alpha-amylase (as a marker of the Autonomic Nervous System (ANS)).

14 Linnemanetal 2017

15 Stress reduction

Thirteen of 33 biomarkers tested were reported to change in response to listening to music.

16 Finn and Fancort 2018

III.

17 Conclusion

Music therapy has proved to be an effective alternate therapy for combating stress and related disorders. It's a non-invasive, cost effective and efficient technique and should be encouraged to be used under the supervision of a trained music therapist for best results.

	indicated that listening to music reduces heart rate, respiratory rate and blood pressure. Studies that included two or more music sessions led to a consistent pain-reducing effect (Bradt and Dileo 2009).
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Volume XIX Issue II Version I	Migraine Migraine
( ) K	Migraine in children
Medical Research	Effect of music on stress hormones Stress induced by chemotherapy
Global Journal of	Stress induced by corporate life style Stress Depression
	Reduced cortisol levels during spinal anaesthesia Depression Randomized control trial

Figure 1:

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Figure 2: Table 1 :

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