



## Music therapy in generalized anxiety disorder



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### ABSTRACT

This study proposes music therapy as a novel approach in clinical psychiatry for generalized anxiety disorder (GAD), which is one of the most common and incapacitating mental disorders. In this study, we present the results of a pilot intervention with patients under clinical control and receiving pharmacotherapy. Music therapy was used to decrease the symptomatology of this disorder following a structured protocol. The pilot study group consisted of seven patients with no comorbidities. The patients were characterized by Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) criteria and were diagnosed by psychiatrists at National Institute of Psychiatry Ramón de la Fuente Muñiz. The researchers programmed 12 × 2 h sessions for this group of patients. A pre-test/post-test design using the Beck Anxiety and Depression Inventory was used. The Wilcoxon statistical test for related groups in global scores demonstrated a significant reduction after the intervention. The results demonstrate that music therapy was effective in reducing anxiety and depression levels in GAD patients. Additional studies are required to corroborate these pilot data.

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### Introduction

The cross-cultural study conducted by the World Health Organization (WHO) in 14 countries demonstrates that a substantial proportion, that is, approximately 24% of all patients in primary care settings, have a mental disorder. Furthermore, anxiety is one of the three most common diagnoses in these settings (Goldberg & Lecrubier, 1995). The results of Mexico's 2001 National Psychiatric Epidemiology Survey (Medina-Mora et al., 2003) reveals that the most frequent disorders are of the anxiety type (14.3% at some moment in a person's lifetime) and that metropolitan areas have the highest prevalence (3.4%) of such disorders. Anxiety disorders (AD) are appearing at earlier ages, with an estimated mean of 15 years as reported in the bulletin of the WHO (2000). Of the different types of AD (i.e., specific phobias, social phobia, post-traumatic stress disorder, agoraphobia, panic disorder), generalized anxiety disorder (GAD) exhibits the highest incidence (7.9%) according to the results of a study with more than 25,000 patients who were assessed using the CIE-10 criteria WHO (2000). GAD in patients is associated with substantial reductions in quality of life and deteriorated

functionality. The National Comorbidity Survey administered in the United States found that GAD is always associated with a significant degree of deterioration (Hoge, Oppenheimer, & Simon, 2004).

With respect to the treatment of anxiety, in 2008, the World Federation of Societies of Biological Psychiatry (WFSBP) Guidelines included pharmacological treatment recommendations based on the quality of evidence for efficacy and risk/benefit assessment of GAD (Bandelow, Zohar, Hollander, Kasper, & Möller, 2008). The strongest evidence of clinical efficacy in the treatment of GAD was found for SSRIs—citalopram, paroxetine, sertraline; SNRIs—venlafaxine, duloxetine; the calcium channel modulator—pregabalin; and a second generation antipsychotic (SGA)—quetiapine (Bandelow et al., 2008; Allgulander, 2010).

In addition, many authors, citing strong evidence, have recommended the benzodiazepines – alprazolam and diazepam – for treatment-resistant cases (Lanouette & Stein, 2010). These guidelines specify that in treatment-refractory GAD patients, augmentation of SSRI treatment with risperidone or olanzapine (SGAs) may be used (Bandelow et al., 2008; Allgulander, 2010).

Another report indicates that the psychosocial first-line treatments such as cognitive behavioral therapy (CBT), short-term psychodynamic psychotherapy, and relaxation therapies such as mindfulness and meditation-based cognitive therapy are efficacious even in treatment-resistant cases, both on their own and when combined with medication (Lanouette & Stein, 2010).

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However, though many treatments exist, both pharmacological and non-pharmacological evidence suggests that at least 50% of patients with GAD remain symptomatic despite first-line treatments (Hoge et al., 2004; Ravindran & Stein, 2009).

Therefore, it is important to propose and explore new ways to improve the treatment of this disorder, and accordingly, music therapy is proposed as one such possible non-pharmacological treatment.

Music therapy (MT), broadly speaking, can be defined as the use of music for therapeutic ends, which is the focus of this pilot study. There are reports that music can induce favorable effects in individuals with different pathologies (Juslin, 2003; Loomba, Arora, Shah, Chandrasekar, & Molnar, 2012). For example, previous publications have demonstrated the effectiveness of music in temporarily relieving symptoms common among patients with medical problems such as asthma and cancer (Sliwka, Nowobilski, Polczyk, Nizankowska-Mogilnicka, & Szczeklik, 2012; Pothoulaki, MacDonald, & Flowers, 2012). It has also been used as an anxiolytic-like stimulus in treating osteoarthritis (Ottaviani, Bernard, Bardin, & Richette, 2012), in reducing pre-operative anxiety (Ni, Tsai, Lee, Kao, & Chen, 2012) and in assisting ventilation patients (Davis & Jones, 2012). Beyond the aforementioned applications, music has also been reported as an aid in the treatment and rehabilitation of some psychiatric conditions, including schizophrenia, sleep disorders, and prevalent problems, such as depressive disorder (Mössler, Chen, Heldal, & Gold, 2011; Chang, Lai, Chen, Hsieh, & Lee, 2012; Erkkilä et al., 2011). In the same way, it has been used to reduce anxiety and agitation in patients with dementia (Sung, Lee, Li, & Watson, 2012).

It is necessary to note that there is a difference between playing music in a clinical place to achieve a specific effect and the use of MT in that MT is a form of psychotherapy with an epistemological context, and as such, it requires a therapist be trained in specific psycho-music techniques.

There are several types of MT, each associated with specific psychological tendencies. In this pilot study, humanist MT of Mexico, which is based on Gestalt psychology (Muñoz, 2008), was applied with some variations as this is the direction in which the researchers have been prepared.

The use of MT for the treatment the GAD could confer the following advantages:

1. The capacity to induce deeper states of abstraction and concentration.
2. An improved ability to evoke positive or convenient memories that make possible cognitive recuperation in a new way.
3. The creation of controlled situations that simulate problematic experiences from daily life and the ability to initiate a new perspective on how to approach them.

The present pilot study used a group MT design and was conducted in the applied psychophysiology area of clinical services at the National Institute of Psychiatry Ramón de la Fuente Muñiz (INPRFM) in Mexico City. Among the most common reasons for inter-consultations regarding AD are poor responses to pharmacotherapy, prolonged treatment times, pregnant women on drug suspension and exacerbations and/or relapses. This specific department of clinical services usually receives GAD patients seeking psychotherapy, and the usual treatment in such instances is CBT due to its short-term effectiveness and its optimization of human resources. In the INPRFM, CBT is frequently administered in the form of group therapy. It was this approach that led us to adapt methods of MT for the optimization of human resources and the short-term treatment therapies such as CBT.

The aim of this pilot study was to explore whether the application of MT can reduce anxiety levels in patients with GAD, as

measured using the Beck Anxiety Inventory, and whether this treatment can reduce depression levels in patients with GAD, as measured using the Beck Depression Inventory. We determine that it is important to evaluate depression symptoms at the beginning and the end of the intervention as GAD is often found in association with varying degrees of depression (Hoge et al., 2004; Maser & Cloninger, 1990). Accordingly, the Beck Depression Inventory was administered even though the inclusion criteria for this study stated that patients with GAD had to be free of comorbidities.

Two questions drove this study. 1. Does the application of MT group sessions significantly reduce anxiety levels in patients with GAD? 2. Does the application of MT group sessions significantly reduce depression levels in patients with GAD?

## Methods

The recruitment process began with a detailed evaluation of medical records of eligible patients (elaborated by psychiatrists of INPRFM) who were channeled to the applied psychophysiology area due to persistent symptoms despite pharmacological treatment for a minimum of one year. The following inclusion criteria were applied GAD patients without comorbidities as diagnosed by psychiatrists using the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) norms; subjects currently undergoing pharmacotherapy; subjects are part of the psychiatric outpatient control group; subjects are free of medical illness; subjects exhibit healthy auditory and locomotor systems. Initially, 10 patients who were between the ages of 25 and 45 years were invited to participate. Interviews were then held in which subjects reported, on a musical-therapeutic sheet, the musical history of their families including sound-musical influences in different stages of development and current musical habits. This procedure was designed to explore whether they presented alterations such as musicogenic epilepsy, amusia probable, trauma associated to some type of music, or other music-related problems. Furthermore, this information was considered in determining the music that was to be used during the sessions. Before agreeing to join the group, all patients received detailed information, from the researchers, about the features of MT and their rights during treatment. By accepting, patients gave informed consent. The study was approved by the ethics committee of clinical services in accordance with the Declaration of Helsinki. While all patients initially accepted the invitation, 3 subjects left the group after the second session. Thus, the final pilot group was comprised of 7 people, 3 men and 4 women, who remained until the end of the treatment period, which totaled 12 sessions.

The therapist who led the music therapy intervention was certified as an Individual Professional Member by the World Federation of Music Therapy (WFMT) and by the Mexican Institute of Humanist Music Therapy (Instituto Mexicano de Musicoterapia Humanista, IMMh).

## Music therapy

The treatment process was conducted in two modalities - receptive and active MT. The receptive application used prerecorded music or was executed by the music therapist, without the active involvement of the patient in the psychotherapeutic process of the musical creation. The active application engaged both the music therapist and the patient in the creation of music. For example, they may have used their voices, bodies and/or musical instruments during the session (Muñoz, 2008). Our MT treatment, as in CBT, included breathing exercises, tension-relaxation techniques, psycho-education, and exercises for handling irrational thoughts and patterns of erroneous behaviors (Dobson & Dozois, 2010). By

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